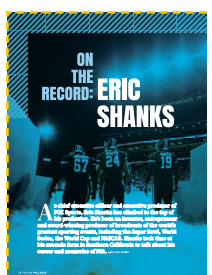




Fall 2020 Teaching Guide

In this guide, you will find activities for seven articles in the fall 2020 issue of FFA New Horizons. Worksheet answer keys can be found at the end of the activity worksheet. The activities are aligned to educational standards. (See *each activity for the specific standards.*)



ON THE RECORD: ERIC SHANKS

Eric Shanks is a former FFA member who is now the chief executive officer and executive producer of FOX Sports. Learn about the impact FFA had on his career path.

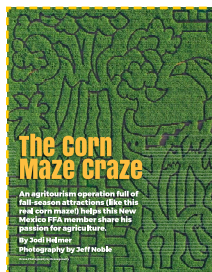
[Appendix 1: On the Record: Eric Shanks](#)



HOW TO #SPEAKAG WITH CONSUMERS

Understanding consumers and where they gain information about the agriculture industry is critical, but we also need to know how we can best share accurate information. Discover how we can educate the public in a world that is full of information.

[Appendix 5: How to #SpeakAg with Consumers](#)



THE CORN MAZE CRAZE

The agritourism industry is a vital part of engaging and educating the public about the agriculture industry. Explore how one agritourism site works to engage the community, and learn how you could engage the community in your state.

[Appendix 2: The Corn Maze Craze](#)



URBAN AG OASIS

A leader in grain production and home to numerous innovators, Iowa is deep-seated in agriculture and rural experiences. Typically, FFA in Iowa has focused on rural communities. However, the trend today is urban. Read this article to learn about the new chapters in some of the state's largest cities.

[Appendix 6: Urban Ag Oasis](#)



AG 101: THE BUZZ ABOUT HONEYBEES

Honeybees are a crucial component of the agriculture industry. Learn about honeybees and their role in the industry.

[Appendix 3: Ag 101: The Buzz About Honeybees](#)



BULRUSH IN THE BAYOU

Read this article to learn how an FFA chapter in Louisiana is helping to restore wetlands in the state.

[Appendix 7: Bulrush in the Bayou](#)



PROTECTING POLLINATORS

Monarch butterflies are disappearing from the landscape. A group of scientists, conservationists, corporate leaders and farmers are working to increase the butterfly population through habitat creation and restoration. Read this article to learn more about what efforts are being made to help with the monarch butterfly population.

[Appendix 4: Protecting Pollinators](#)

VOCABULARY ACTIVITY

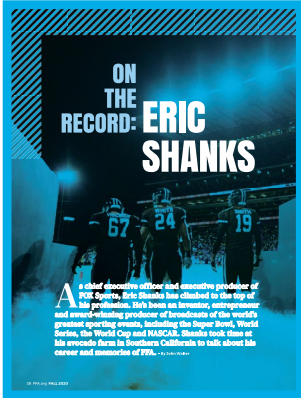
For a list of the vocabulary and an activity, see [Appendix 8](#).





NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

ON THE RECORD: ERIC SHANKS

Eric Shanks is a former FFA member who is now the chief executive officer and executive producer of FOX Sports. Learn about the impact FFA had on his career path.

Bell Ringer

If you are in an organization, like FFA, are you guaranteed to end up in an industry related to that organization (ex. agriculture)? Why or why not?

Discussion Questions

1. How can FFA prepare you for your dream career?
2. What is the relationship between athletics and agriculture?

Activity

Part 1: Begin by handing out the worksheet "On the Record: Eric Shanks" (Appendix 1) and then have students read the article "On the Record: Eric Shanks" in the fall 2020 issue of FFA New Horizons and complete the questions as they go. Once students have finished, have them think-pair-share with their neighbor about the link between agriculture and athletics. Have a few pairs share their responses with the class and discuss how there are many careers that still have agricultural ties even when a person is not involved directly in production agriculture.

Part 2: Athletics and agriculture have a very close tie. Students should begin by reviewing the Agriculture, Food and Natural Resources (AFNR) Value Chain. Next, students will select a school-appropriate, product-based favorite Super Bowl commercial (ex. Doritos). Then, identify and describe how that product fits into each step of the AFNR Value Chain. Students will add their description to each step of the diagram. Tip: Use the following website for more information on each step in the AFNR Value Chain: [FFA.org/value-chain](https://www.ffa.org/value-chain). Once all students have mapped out their product, have them hang up their value chains around the classroom, and have students complete a short gallery walk to learn about the other products that were selected. During this time, have students engage in conversation about the value chain and how products are developed. Follow with the question "What role does agriculture have in large athletic events like the Super Bowl?"

FFA Tip

Explore the AFNR Value Chain and map out how different FFA events fit into each step.

SAE Tip

Create a list of different careers, both agricultural and non-agricultural, and challenge students to list traits they are developing or skills they are learning in their own SAE that would help them succeed in each career field.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.02 • FFA Precepts: FFA.PL-A, FFA.PL-E, FFA.PL-F, FFA.PG-J, FFA.CS-N • Common Career Technical Core: AG.2 • AFNR Career Ready Practices: CRP.02, CRP.04, CRP.07, CRP.08 • P.21 Skills: COMMUNICATION, CRITICAL THINKING AND PROBLEM SOLVING, FLEXIBILITY AND ADAPTABILITY, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Entrepreneur
Inventor
Overachieve
Perspective

EXIT TICKET

What role does agriculture play in the industry you are interested in pursuing as a career (ex. medicine, athletics, etc.)?

CAREER FOCUS AREA

Any

RESOURCE HIGHLIGHTS

Agriculture, Food and Natural Resources Value Chain, [FFA.org/value-chain](https://www.ffa.org/value-chain)

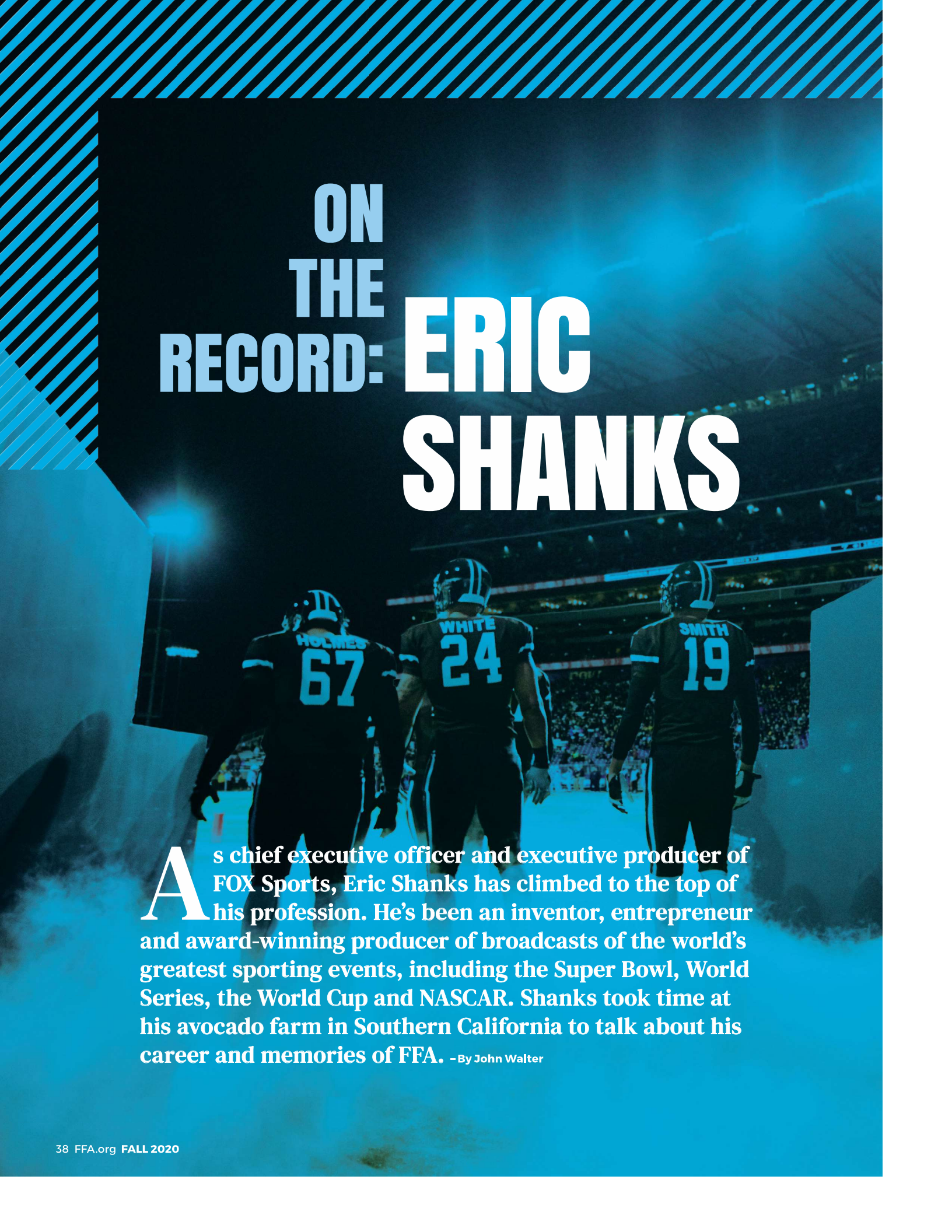
REFERENCES

Agriculture, Food and Natural Resources Value Chain, [FFA.org/value-chain](https://www.ffa.org/value-chain)

APPENDIX

Appendix 1: On the Record: Eric Shanks





ON THE RECORD: **ERIC SHANKS**

As chief executive officer and executive producer of FOX Sports, Eric Shanks has climbed to the top of his profession. He's been an inventor, entrepreneur and award-winning producer of broadcasts of the world's greatest sporting events, including the Super Bowl, World Series, the World Cup and NASCAR. Shanks took time at his avocado farm in Southern California to talk about his career and memories of FFA. —By John Walter

"I learned that you don't know what you can do until you try to do it. I always took the first opportunity, made the most of it and tried to overachieve." - ERIC SHANKS



Eric Shanks

NH-What were some highlights of your FFA experience?

ES-For me, everything starts with the people. The people who were in our class in the little town of Brazil, Ind., and the FFA chapter there were what made the experience great. Also, we had an amazing ag teacher and leader of our FFA chapter, Steve Stoelting. It was his passion for everything from entomology to soil judging to basketball that made all of us in FFA have such a great time.

NH-What's the most memorable sporting event you've overseen at FOX Sports?

ES-A lot of what we do is plan, so we will plan for a Super Bowl for an entire year — the pregame show, how many cameras we're going to have, how we're going to cover the game and so on. But you can't plan for the game itself. We had the privilege of covering the greatest comeback in Super Bowl history, which was Tom Brady's 28-3 comeback. That was probably one of the best games FOX Sports ever produced, because late in the game, we never let the viewer think the game was out of hand.

NH-Which athlete have you been most excited to meet or watch?

ES-The people in the FOX Sports family I get to work with every day are amazing people, whether it's Terry Bradshaw, Michael Strahan, Alex Rodriguez, Urban Meyer or others. They just happen to be Hall of Fame athletes. Whether it's Bradshaw or Alex, they're leaders here, just like they were on the field. It's great to be able to learn from them.

NH-How did FFA help you with your career path?

ES-Again, I think it goes back to the people and learning to have respect for others. In my line of work, I meet so many different people, and if you don't start out with that perspective of respecting one another, I just don't think you're going to be as successful. Just growing up in ag, I always say that what we do in live television is a lot like farming. Every day you wake up and you don't know what the day's going to bring. We'd all be better off if everyone had the skills and mind-set of a farmer.

NH-What advice would you give FFA members?

ES-I've always given the advice to bite off more than you can chew. When I was out of school and moved to the big city or took different jobs at different places, I learned that you don't know what you can do until you try to do it. I always took the first opportunity, made the most of it and tried to overachieve.

NAME: _____

Appendix 1: On the Record: Eric Shanks

Created: Fall 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "On the Record: Eric Shanks" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.

What does Eric Shanks do?



What major event does Shanks spend a large part of the year helping plan?

- a. World Series
- b. Stanley Cup
- c. Olympics
- d. Super Bowl

Where is Eric Shanks from?

- a. San Francisco, CA
- b. Brazil, Indiana
- c. New Orleans, Louisiana
- d. Baltimore, Maryland

What role did FFA have in preparing Shanks for his career?

What advice does Shanks provide for FFA members?



Give a specific example of how you could use this advice in your life.

What link connects athletics and agriculture? Give an example.



Part 2

DIRECTIONS:

Athletics and agriculture have a very close tie. Complete the following activities to learn how agriculture and the items we associate with athletic competitions really tie together.

- (1) Review the Agriculture, Food and Natural Resources (AFNR) Value Chain below.
- (2) Select a school-appropriate, product-based favorite Super Bowl commercial (ex. Doritos).
- (3) Identify and describe how that product fits into each step of the AFNR Value Chain. Add your description to each step of the diagram. Tip: Use the following website for more information on each step in the AFNR Value Chain:

[FFA.org/value-chain/](https://www.ffa.org/value-chain/).

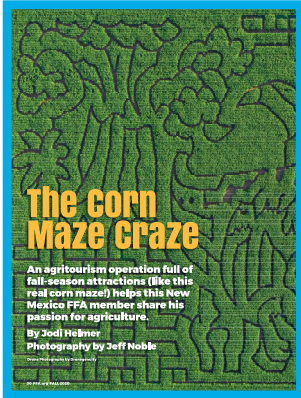
Product Selected: _____





NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

THE CORN MAZE CRAZE

The agritourism industry is a vital part of engaging and educating the public about the agriculture industry. Explore how one agritourism site works to engage the community, and learn how you could engage the community in your state.

Bell Ringer

What is agritourism?

Discussion Questions

1. What is agritourism?
2. Why is agritourism important to the economy?

Activity

Part 1: Hand out the worksheet "The Corn Maze Craze" (Appendix 2). Have students read the article "The Corn Maze Craze" in the fall 2020 issue of FFA New Horizons and complete the worksheet. Once students have completed the reading and questions, have students share popcorn-style why they think agritourism is important. Hold a class discussion after five to 10 students have shared their opinions.

Part 2: Next, students will complete research about agritourism sites in their states. Then, have students reflect why that business is considered agritourism. As students work, draw an outline of your state on the board. Once students finish, have them come to the board to locate and record the agritourism site they found. Once students are done recording their research, have them share with the class why the site they selected is considered agritourism. Next, have students research the top five agricultural commodities in their state and identify which one they feel people in their state need to learn about the most. Have five students share their top commodity.

Part 3: Students will follow the steps outlined on the worksheet to design their own agritourism site for their county. Have students share their theme and attractions with two other students and then with the class.

Part 4: Have students use the graph provided to map out their own corn maze for their agritourism site. The following guidelines need to be kept in mind while students develop their site: (1) the maze should follow the theme selected, (2) identify the graph measurements to ensure their maze will make sense when made into a large scale (ex. one square is one foot) and (3) the maze should have a clear entrance and exit, and they should be labeled. Once students have finished, have them hang their mazes around the room for all students to be able to see the creativity of the class.

FFA Tip

Have students use the Agricultural Literacy Experience Planning Guides from National FFA to plan an event to share with their peers, community or elementary students to help educate them on an agricultural topic.

SAE Tip

Challenge students to list all the types of agricultural tourism they can. Have them select one type and list all the skills and knowledge required to create and run the business. Explore your local agritourism business creation or employment opportunities and share them with students.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.02, CS.05 • FFA Precepts: FFA.PL-A, FFA.PG-J, FFA.CS-N • Common Core – Reading: Informational Text: CCSS.ELA.RI.9-10.2, CCSS.ELA.RI.9-10.3, CCSS.ELA.RI.9-10.4 • Common Core-Literacy in Science & Technical Subjects: Writing: WHST.9.10.4 • Common Career Technical Core: AG.2, AG.5 • AFNR Career Ready Practices: CRP.02, CRP.04, CRP.06, CRP.08 • P.21 Skills: COMMUNICATION, CRITICAL THINKING AND PROBLEM SOLVING, FLEXIBILITY AND ADAPTABILITY, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Agritourism
Attraction
Undertaking

EXIT TICKET

What role does agritourism play in helping to educate the general public about the agriculture industry?

CAREER FOCUS AREA

Any

RELATABLE LINKS

[Agricultural Literacy Experience Planning Guides](#)

RESOURCE HIGHLIGHTS

[AgExplorer.com](#)

[Agricultural Literacy Experience Planning Guides](#)

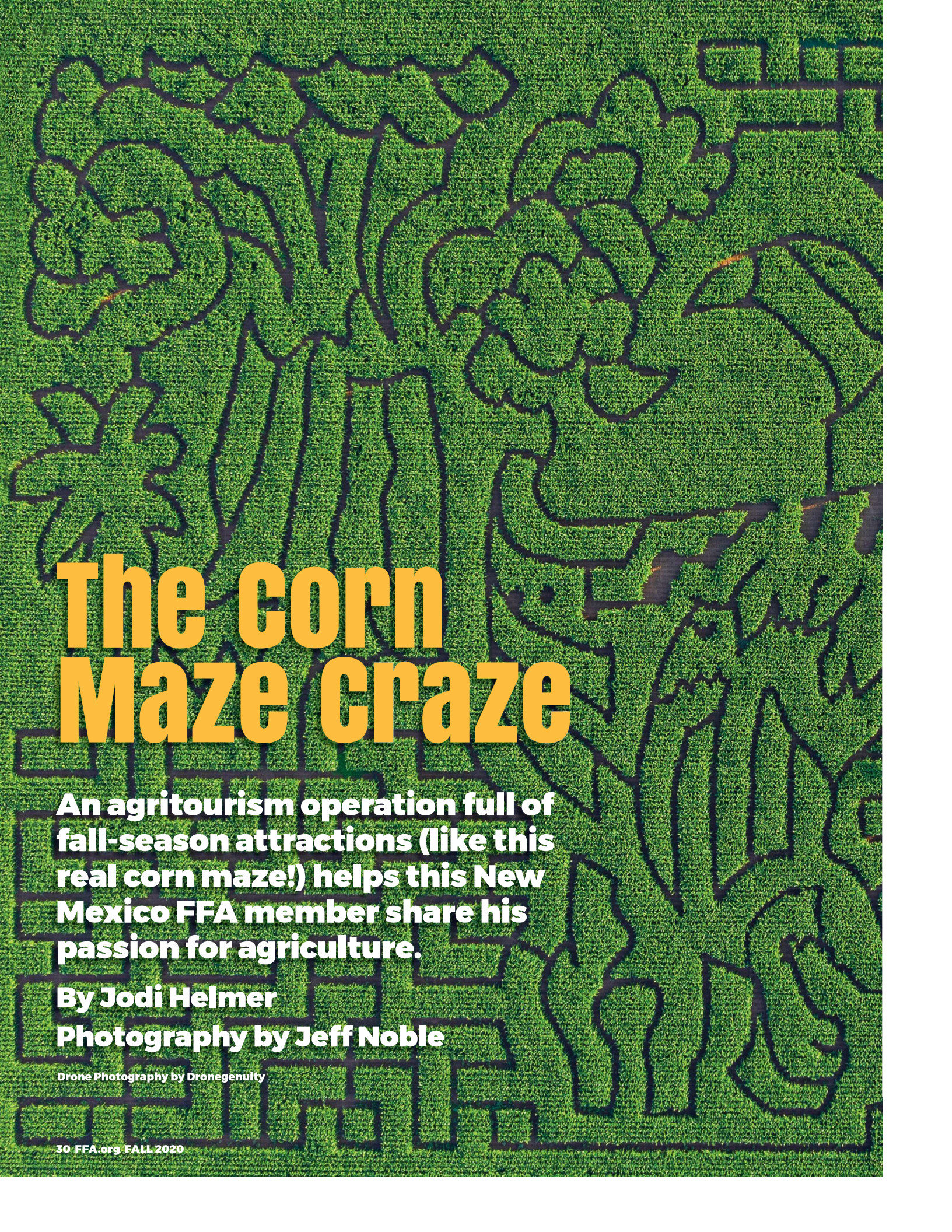
REFERENCES

AgExplorer: [AgExplorer.com](#)

APPENDIX

Appendix 2: The Corn Maze Craze





The corn Maze craze

An agritourism operation full of fall-season attractions (like this real corn maze!) helps this New Mexico FFA member share his passion for agriculture.

By Jodi Helmer

Photography by Jeff Noble

Drone Photography by Dronegenuity





The McCall family had been growing pumpkins on their Moriarty, N.M., farm for several years when they decided to invite the local kindergarten class to visit their pumpkin patch.

“The school groups came to the farm on a school bus, went out into the field and picked pumpkins for \$4 each,” says FFA member and farmer Caleb McCall. “My dad had an aha moment that this could work for the farm.”

After those first school visits in 1998, trips to McCall’s Pumpkin Patch became an annual tradition. The farm transitioned from selling truckloads of pumpkins wholesale to welcoming school groups and opening the farm gates to the public. On those first fall weekends, the farm welcomed an average of 2,000 visitors, and some families drove from as far away as Albuquerque and Santa Fe to experience life on the farm.

“It just grew from there,” McCall says. “We started out with one class of kindergartners in 1998, and last season, we had over 100,000 people.”

Sharing the Story of Agriculture

The pumpkin patch was only the beginning.

The McCall family began adding new attractions each season and developed an agritourism business — farms that contain a recreational or educational enterprise component, such as tours of a working farm and pick-your-own fruits, as described by the U.S. Department of Agriculture (USDA). Agritourism isn’t a new trend, but it’s one that continues to grow. “Farm agritourism revenue more than tripled between 2002 and 2017, according to data from the Census of Agriculture,” the USDA reports. “Adjusted for inflation, agritourism revenue grew from \$704 million in 2012 to almost \$950 million in 2017.”

The McCall operation started with a pumpkin patch and petting zoo. It now offers more than 50 attractions, including hayrides, pumpkin cannons, a produce stand, a low ropes

course, a cow-theme train ride, pig races and multiple food outlets.

One of the newest attractions is a 3,000-square-foot castle complete with princess makeovers, tea parties and costumed princesses reading stories. McCall calls the castle his favorite attraction on the farm. “It’s the epicenter of our Main Street,” he says.

In addition to looking to world-class attractions such as Walt Disney World and Dollywood for inspiration, the family has connected with agritourism operators across the country to help generate ideas and trade tips for running a successful pumpkin

Top left: A 3,000-square-foot castle is complete with princess makeovers, tea parties and costumed princesses. Top right: Morgan, Caleb, Kevin and Kirsten McCall (left to right). Above: A 32-foot-tall milk can — the second tallest in the world — that operates as a soft-serve ice cream stand is one of the standout attractions.



It started with
a pumpkin patch
and petting
zoo, and it
has grown
to include
**more
than
50
attractions.**

A young man with short brown hair and black-rimmed glasses is smiling broadly at the camera. He is wearing a blue short-sleeved button-down shirt. He is standing in a cornfield, with large green corn leaves in the foreground and background. His arms are crossed in front of him, partially obscured by the leaves.

“We want to
take people
away from
the city,
away from
technology,
**away
from the
stress.”**

- Caleb McCall



Above: McCall's Pumpkin Patch started with one class of kindergartners in 1998 and had over 100,000 visitors last season.

patch and corn maze. Creating an entertaining environment is just part of their mission.

"We're a miniature-scale amusement park with an agriculture focus," McCall says. "I've been very active about advocating for agriculture. I love teaching people about where their food comes from because with that knowledge and their support for agriculture, the industry thrives."

The FFA Connection

McCall is always learning. As a member (and past president) of Moriarty FFA, he learned a lot about farming in agriscience classes and activities, such as the agronomy career development event (CDE). The farm is also the basis for his current supervised agricultural experience (SAE) in diversified agriculture. He hopes it will help him earn his American Degree in 2020. McCall also credits FFA leadership skills that have been essential on the farm.

Attending the New Century Farmer conference in 2019 allowed him to connect with other young producers to share knowledge, ideas and challenges that will propel their future success. He calls it a highlight of his FFA career, and he believes that staying in contact with attendees and sharing experiences will influence his path in agriculture.

"If I didn't do FFA, I don't think I'd be able to talk about the farm as fluently," he says.

McCall is currently a freshman studying plant, soil and

environmental science at West Texas A&M University, and he's developing even more of a foundation for a career in agriculture.

"My dad was taught by his grandpa how to farm, and a lot of the practices we used are passed down. No one on the farm has ever had the understanding of how it all works," he explains. "My plan is to get that understanding and come back and be able to fix a lot of those practices and bring more of an educational process to the farm."

Lost in the Possibilities

The 14-acre corn maze is one of the highlights of McCall's Pumpkin Patch. It takes months to pick a theme and settle on a design. Past themes have included a tribute to New Mexico, Pac-Man, *Looney Tunes*, and a castle and dragon. The 2020 maze features dinosaurs as a nod to the *Land of the Lost* TV series. The farm has also worked with sponsors, including McDonald's and the University of New Mexico, to use the corn maze as a canvas for logos and branded messages.

In 2013, after the now-iconic Super Bowl commercial, the McCall family chose "God Made a Farmer" as its corn maze theme. The maze design featured a tractor and an American flag. McCall says it was one of his favorites. Once the design is complete, McCall flies a drone over the corn maze and snaps photos so visitors can see how it looks from above.

The family works with The MAiZE Inc., the world's largest cornfield maze design company, to design and cut all of its corn mazes. The McCalls also travel to destinations such as Arizona, Hawaii, Florida and California to attend annual conferences to stay up-to-date on trends.

The maze is not the only thing that changes every year. The McCall family is constantly adding new attractions to its agritourism operation. A 32-foot-tall milk can — the second tallest in the world — that operates as a soft-serve ice cream stand is one of the standout attractions. Major improvements to the haunted attractions are under construction and scheduled to make their debut this fall.

Although McCall's Pumpkin Patch already has a strong educational focus, McCall hopes to expand on that element of the operation by adding an educational barn that highlights different areas of agriculture, such as dairy, poultry and crop production to further educate visitors about where their food comes from.

"We want to take people away from the city, away from technology, away from the stress," he says. "We want them to have fun and experience what life is like on the farm." •

THE MAKING OF A MAZE

Creating a corn maze is a big undertaking. Some farmers take a DIY approach, sketching out designs on graph paper and using GPS-enabled tractors to carve paths, while others hire companies to turn their ideas into maze designs. In both cases, the process is similar. Corn is planted in a grid. When it grows knee-high, flags are set out to mark the outline. The design is spray-painted and then cut to create the paths.

In 2013, FFA sponsor Culver's started the Thank You Farmers project to support agricultural education programs. The restaurant group has partnered with farmers to create agricultural-themed mazes for the past five seasons, and the designs have ranged from a honeybee and hive to a horse pulling a plow. To date, Culver's has grown 38 Thank You Farmers project corn mazes in 19 states. In 2018, a farm in Olivet, Mich., designed a corn maze with the FFA logo.



NAME: _____

Appendix 2: The Corn Maze Craze

Created: Fall 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "The Corn Maze Craze" in the fall 2020 issue of *FFA New Horizons* and complete the activities below.

What does the McCall family grow?

- a. Corn
- b. Hay
- c. Honey
- d. Pumpkins

According to the article, what does McCall say is his reason for advocating for agriculture?

What is the topic of McCall's supervised agricultural experience (SAE)?

How many different attractions has the McCall farm grown to?

- a. 5
- b. 10
- c. 30
- d. 50

What FFA conference did McCall attend in 2019 that made a large impact on his future career goals and objectives?

What is the theme for the 2020 corn maze on the McCall farm?

- a. Drones
- b. "God Made a Farmer"
- c. Tractor and American Flag
- d. "Land of the Lost"



How tall does the corn tend to be when the maze is flagged for the selected design?

Thinking about what you just read, define agritourism.

Why do you think agritourism is so important? Give two reasons.

- 1.
- 2.

Using [AqExplorer.com](https://www.aqexplorer.com) and what you have learned about agritourism, identify two careers that would be needed to run/work at an agritourism site.

(1)

(2)



Part 2

DIRECTIONS:

Agritourism is a very important component in every state. Complete the following activities to learn about agritourism in your state and to plan your own operation.

Thinking about your state, identify an agritourism destination that already exists.

Name: _____

What makes this an agritourism location?

NAME: _____

What are the top 5 agricultural commodities in your state?

- 1.
- 2.
- 3.
- 4.
- 5.



Which agricultural commodity do you think your state needs to learn more about?

Why?

Part 3

DIRECTIONS:

Today you are going to design your own agritourism site for your county. Follow the steps below to help guide you through the process.

1. What will be your theme for your agritourism site this year? _____
(Tip: Think about the commodities that you identified above, hot topics in the industry, etc.)
2. Why did you select the theme that you did? What is the significance in educating the public?
3. Identify three attractions that you could offer at your agritourism site that would help to educate the general public about agriculture in your state. Describe and draw a picture of each.



(1) Name: _____
Description:

Picture:

(2) Name: _____
Description:

Picture:

(3) Name: _____
Description:

Picture:

NAME: _____

Part 4

DIRECTIONS:

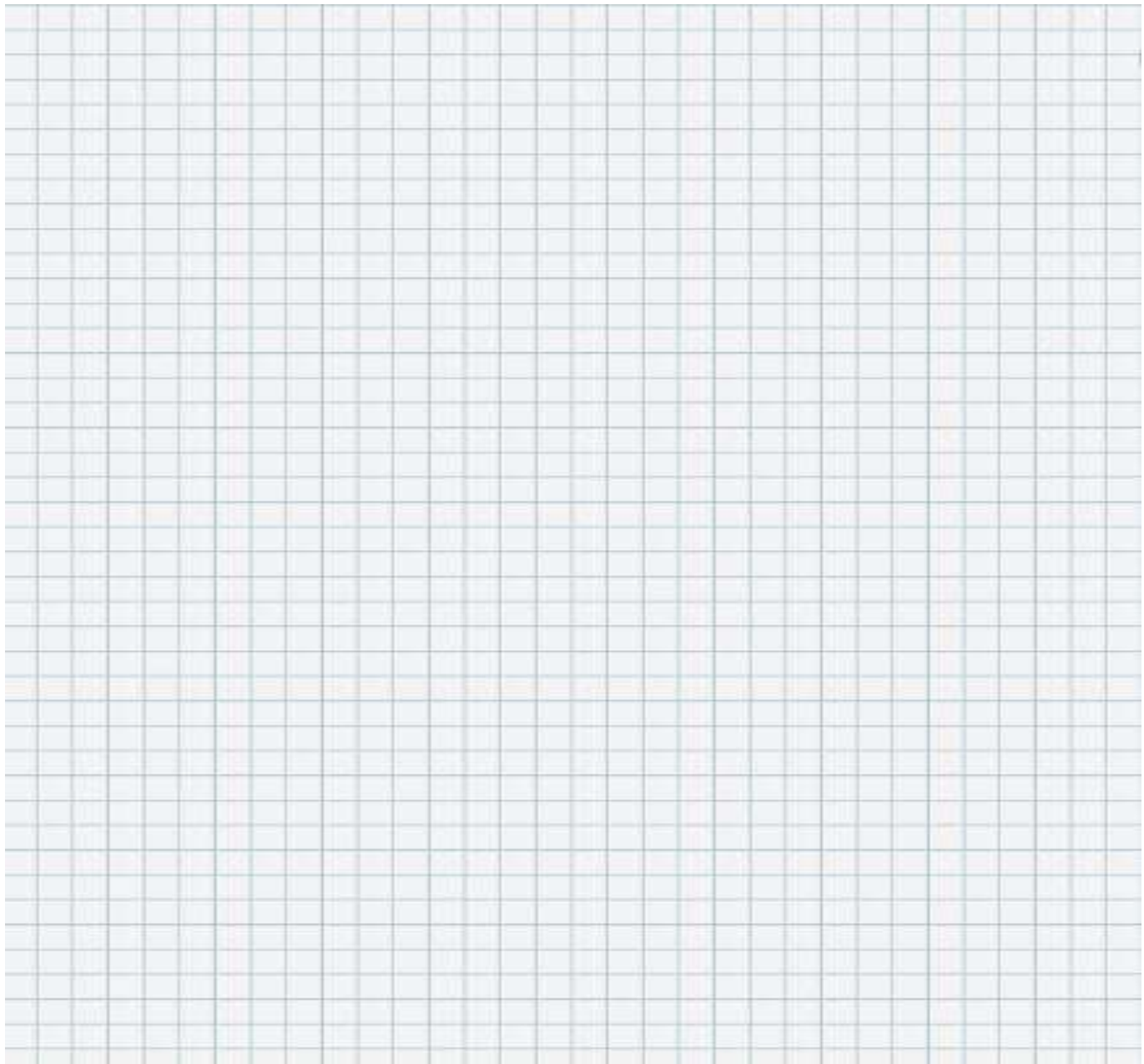
One of the fun and major attractions at many agritourism sites is a corn maze. Each year lots of planning goes into mapping out the design as well as ensuring the maze matches the theme selected. Using the graph below, use your theme to map out your own corn maze for your agritourism site. The following guidelines need to be kept in mind:

- (1) The maze should follow the theme selected above.
- (2) Identify the graph measurements to ensure your maze will make sense when made into a large scale. Example, one square is one foot.
- (3) The maze should have a clear entrance and exit, and they should be labeled.

Theme: _____

1 square = _____

How will each of the activities you identified above impact those visiting your agritourism site?





NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

AG 101: THE BUZZ ABOUT HONEYBEES

Honeybees are a crucial component of the agriculture industry. Learn about honeybees and their role in the industry.

Bell Ringer

In one minute, create a list of words that come to mind when you think of honeybees.

Discussion Questions

1. What role do honeybees play in the agriculture industry?
2. How can I support honeybee populations?
3. What is the difference between granulated white sugar and honey in my food?

Activity

Part 1: Hand out the worksheet "Ag 101: The Buzz About Honeybees" (Appendix 3). Have students read the article "Ag 101: The Buzz About Honeybees" in the fall 2020 issue of FFA New Horizons and complete the worksheet. Once finished, have students share their ideas on how they can help protect the honeybee population and discuss careers associated with caring for and protecting honeybees.

Part 2: Students should follow the steps outlined on the worksheet to plan and price out their beehive project.

Part 3: Have students read and use the information in the article "Benefits of Honey" from Michigan State University to better understand the difference between honey and white granulated sugar and why honey has recently made headlines as a great sugar substitute. Students should complete the provided Venn diagram to organize their learning by comparing and contrasting white granulated sugar and honey.

Part 4: Honey clearly has some great benefits both for our health and for our kitchen. Students are going to take one of their favorite recipes and change the recipe to include honey in place of white granulated sugar. Students should complete the front and back of the included recipe card to share their recipe. When students finish, create a class cookbook. Another step that you can consider is having students make their recipes and then have a taste comparison to see if there is a difference between using honey and white granulated sugar.

FFA Tip

Students can participate in the food science and technology CDE to learn more about the food science industry.

SAE Tip

Raising all kinds of insects for food, bait and other uses can be great SAEs for students, especially those with limited capital and space. Challenge your students to describe at least three different types of insects that can be raised for profit. Help students start their own or a school-based enterprise SAE raising earthworms, crickets, ladybugs, honeybees, etc.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.02, CS.05 • FFA Precepts: FFA.PL-A, FFA.PL-C, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-N
Common Career Technical Core: AG2.AG5 • Common Core – Reading: Informational Text: CCSS.ELA.RI.9-10.3, CCSS.ELA.RI.9-10.3, CCSS.ELA.RI.9-10.8 • Common Core-Literacy in Science & Technical Subjects: Writing: WHST.9.10.4 • Common Core - Math Practices: MP5, MP6 • AFNR Career Ready Practices: CRP.02, CRP.04, CRP.05, CRP.06, CRP.07, CRP.08 • P21 Skills: COMMUNICATION, CRITICAL THINKING AND PROBLEM SOLVING, FLEXIBILITY AND ADAPTABILITY, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Biodiversity
Colony
Nectar
Pollinator
Pollen
Sustainability

EXIT TICKET

What would happen if honeybees ceased to exist?

CAREER FOCUS AREA

Food Products and Processing Systems
Natural Resources Systems

RELATABLE LINKS

Bee Health from Bayer, <https://www.crop-science.bayer.com/people-planet/biodiversity/bee-health>

Nathan Laurenz – Beekeeping, <https://FFA.box.com/s/xi1s09vmctraostvsr3h607g7sv-sumh5>

REFERENCES

[AgExplorer.com](https://www.agexplorer.com)

Benefits of Honey, https://www.canr.msu.edu/news/benefits_of_honey

APPENDIX

Appendix 3: Ag 101: The Buzz About Honeybees

AG 101

The Buzz About Honeybees

By John Walter

Honeybees have a huge job in U.S. agriculture. Their pollination of more than 100 crops is critical on farms from coast to coast, and it is worth more than \$15 billion in added value, according to the U.S. Department of Agriculture. In recent years, beekeepers have faced tough, new challenges in keeping their hives healthy and working. Check out these facts about bees, hives and how you can get involved.

Stable Numbers

Beginning in the mid-1980s, honeybee colonies began a worrisome decline

due to various pest and management challenges. Winter colony losses doubled in the mid-2000s. But numbers have stabilized and are even increasing slightly, says Dick Rogers, bee care manager for Bayer Crop Science. In some states, colony numbers have grown dramatically, he adds.

Inside the Hive

An average of 50,000 honeybees live in a single hive. Three types of honeybees exist there: the one queen who lays eggs, the thousands of female worker bees who gather nectar and pollen and tend the hive, and the male drones who do nothing but mate, after which, they die.

Keeping the Bees

Managing honeybee colony health has become more challenging in recent years. But beekeepers have been rising to the occasion, offsetting annual losses by improving management and splitting colonies, Rogers says. "Current bee numbers are only possible with good management by bee farmers."

2.67
million

Number of honeybee colonies in the U.S. last year

100
pounds

How much honey a colony can produce in a year

$\frac{1}{12}$
teaspoon

Amount of honey produced by a foraging honeybee in her lifetime



Print a Poster:

Scan this code
with your phone's
camera to download
this art as a print-
ready poster.



Learn About Beekeeping

Beekeeping can be a fun, exciting hobby or a supervised agricultural experience (SAE), and it's a great way to learn more about nature and agriculture. Most of the 125,000 beekeepers in the U.S. are hobbyists with fewer than 25 hives.

Related career paths can be found at **AgExplorer.com**.

Teachers: Visit **FFA.org** to download an SAE beekeeping lesson plan.

On the Road

Many colonies of honeybees are trucked around the country to pollinate crops. The work begins in February, when colonies arrive in California. Next, they travel to Florida, then through the Southeast, wrapping up in the Northeast U.S. in late June and early July.

Dancing in the Dark

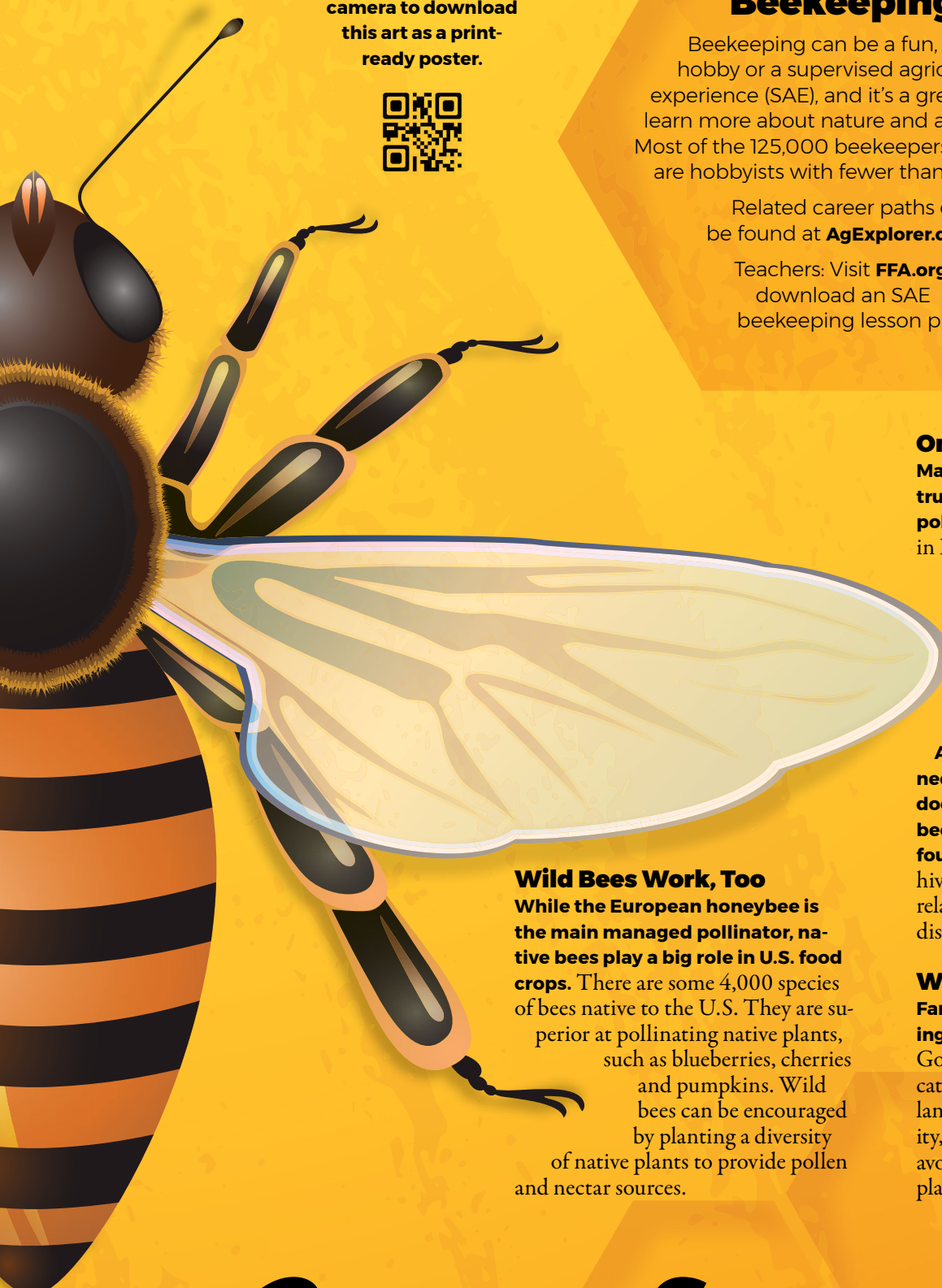
After successfully foraging for nectar and pollen, a honeybee does a waggle dance to show other bees the location of food it has found. In the dance, done in a dark hive, a bee maps the direction of food relative to its angle to the sun and distance to the hive.

What Farmers Can Do

Farmers can play a big role in helping keep honeybee hives healthy. Good practices include communicating with beekeepers, managing land for biodiversity and sustainability, following pesticide labels and avoiding treatment of bee-attracting plants when bees are foraging.

Wild Bees Work, Too

While the European honeybee is the main managed pollinator, native bees play a big role in U.S. food crops. There are some 4,000 species of bees native to the U.S. They are superior at pollinating native plants, such as blueberries, cherries and pumpkins. Wild bees can be encouraged by planting a diversity of native plants to provide pollen and nectar sources.



2

million

Number of flowers foragers need to harvest to make 1 pound of honey

6

miles

How far a honeybee can travel in a trip

15

mph

Estimated flight speed of a honeybee

NAME: _____

Aligned to the following standards:

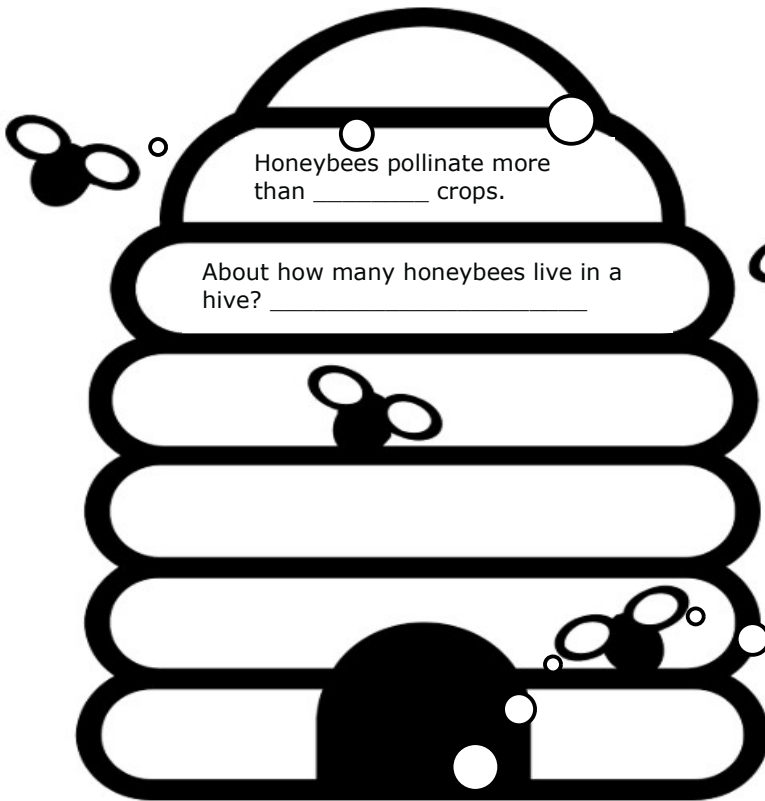
CS.02; CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-N;
AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.8;
WHST.9.10.4; MP5; MP6; CRP.02; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08

Appendix 3: Ag 101: The Buzz About Honeybees

Created: Fall 2020 by the National FFA Organization
Part 1

DIRECTIONS:

Read the article "Ag 101: The Buzz About Honeybees" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.



What are the three different types of honeybees?

1. _____
2. _____
3. _____

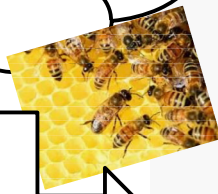
Bees are cited in the article as being "superior pollinators" for what three native crops?

1. _____
2. _____
3. _____

What do bees do to indicate to other bees that they have found nectar and pollen?

What can you do to protect the honeybees?

On the map, draw the path that honeybees trucked across the U.S. follow. Use a different color to identify each stop (if it is a region, color all the states in that region). Be sure to label (on the map) each location.



Using [AgExplorer](#), identify two careers that are involved in the beekeeping industry besides a beekeeper.

1. _____
2. _____



NAME: _____

Part 2

DIRECTIONS:

Honeybees are crucial to food production. It is important to note that “most of the 125,000 beekeepers in the U.S. are hobbyists with fewer than 25 hives.” Knowing that hives on personal property are so important, you will price out and design a beehive or bee-friendly environment that you could have at your home or at school. Follow the steps below to help you plan.



1. Where will you place your hive? Draw an aerial sketch of your home or school, and identify the location of where the hive could be placed. Remember to avoid spaces that are not bee friendly.

2. Develop a numbered list of supplies, including their cost, that you will need to build your beehive.

3. Develop a step-by-step plan of how to construct your beehive.

Total Cost:
\$ _____

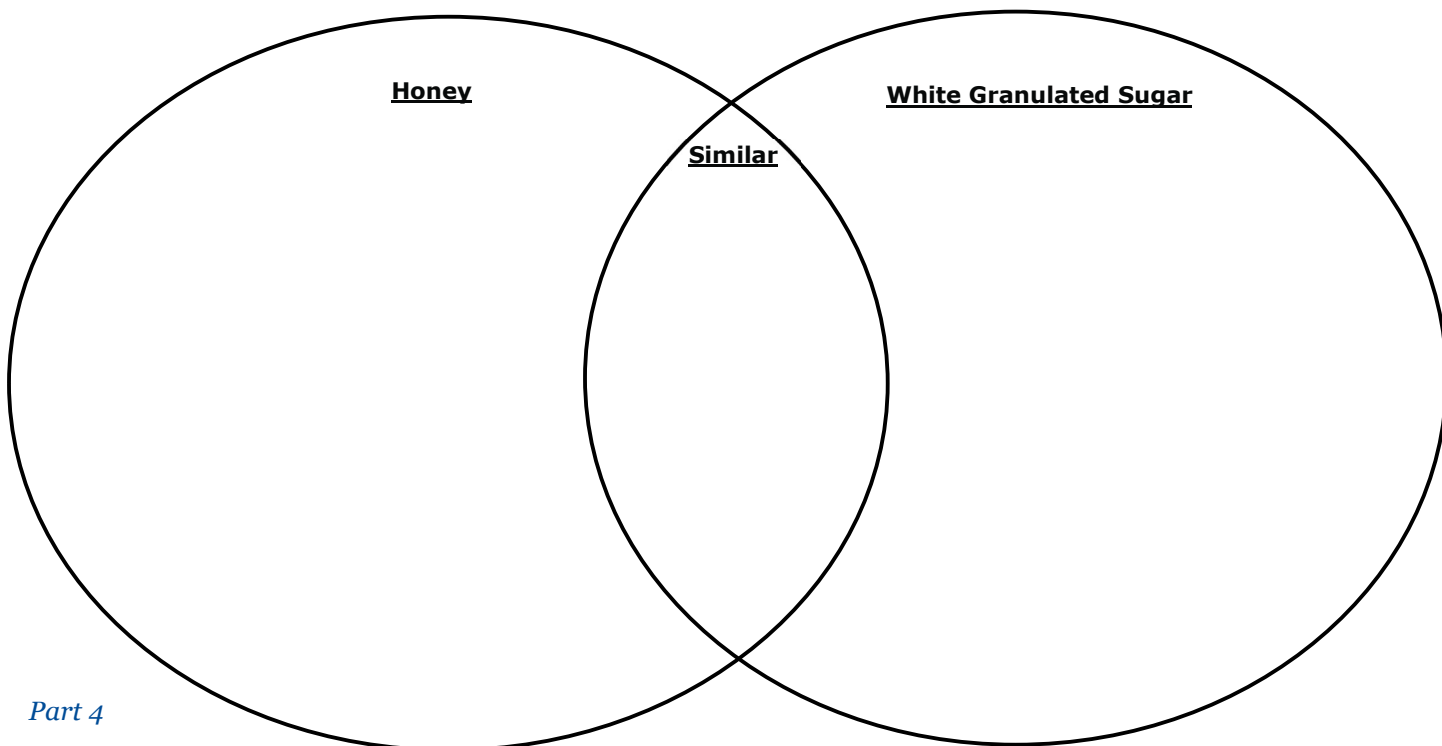
Why is proper hive placement so important? Give a minimum of two reasons.

NAME: _____

Part 3

DIRECTIONS:

Not only are bees important for the environment and pollination, but they also produce a food product that delivers many opportunities in the food industry – honey. Read and use the information in the article "[Benefits of Honey](#)" from Michigan State University to better understand the difference between honey and white granulated sugar and why honey has recently made headlines as a great sugar substitute. Complete the Venn diagram below to organize your learning by comparing and contrasting white granulated sugar and honey.



Part 4

DIRECTIONS:

Honey clearly has some great benefits both for our health and for our kitchen. Take one of your favorite recipes and change the recipe to include honey in place of white granulated sugar. Complete the front and back of the following recipe card to share your recipe!

<u>Ingredients</u>	<u>Directions</u>
	

In one sentence, describe the important role that bees and honey play in the agriculture industry.



ARTICLE SUMMARY

PROTECTING POLLINATORS

Monarch butterflies are disappearing from the landscape. A group of scientists, conservationists, corporate leaders and farmers are working to increase the butterfly population through habitat creation and restoration. Read this article to learn more about what efforts are being made to help with the monarch butterfly population.

Bell Ringer

What are pollinators?

Discussion Questions

1. Is it important to protect pollinators? Explain your answer.
2. Identify and explain one way you can help pollinators in your community.
3. Why do you think some agricultural companies are helping to protect pollinators?

Activity

Part 1: Hand out the worksheet "Protecting Pollinators" (Appendix 4). Have students read the article "Protecting Pollinators" in the fall 2020 issue of *FFA New Horizons* and complete the worksheet.

Part 2: Students should use the following website (or one similar) to label the different parts of the butterfly on the worksheet: <https://www.enchantedlearning.com/subjects/butterfly/allabout>.

Part 3: Students will utilize the space on the worksheet to design a pollinator garden. Students can use the following websites, or similar ones, to aid in their research and design: <https://www.basf.com/us/en/media/featured-articles/Sustainability/BASF-gets-farmers-golf-courses-on-board-to-revive-monarch-butterfly-population.html>, <https://www.fws.gov/midwest/news/PollinatorGarden.html> and <https://www.gardeners.com/how-to/pollinator-garden-design-for-bees/9144.html>.

Part 4: Students will learn how butterfly gardens have an impact on the Agriculture, Food and Natural Resources (AFNR) Value Chain.

FFA Tip

Hold a contest to have FFA members design a pollinator garden for your school. Once all designs are submitted, members can vote for their favorite one.

SAE Tip

Work with landowners in your area to determine if there is space for students to create and manage a pollinator habitat. Challenge students to research the FFA competitions and recognition programs that students could participate in by researching, designing, creating and educating other people about pollinator habitat management and restoration.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.01, CS.02, CS.05 • FFA Precepts: FFA-PL-A, FFA-PL-E, FFA-PL-F, FFA-PG-I, FFA-PG-J, FFA-PG-M, FFA-CS-M, FFA-CS-N, FFA-CS-O • Common Career Technical Core: AG.1, AG.2, AG.5 • Common Core – Reading: Informational Text: CCSS.RI.9-10.2, CCSS.RI.9-10.4 • Common Core – Writing: CCSS.W.9-10.2, CCSS.W.9-10.4 • Common Core – Speaking and Listening: CCSS.SL.9-10.4 • AFNR Career Ready Practices: CRP.02, CRP.04 • P21 Skills: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Sustainability
Pollinator
Conservationists
Initiative
Habitat
Stewardship

EXIT TICKET

How would you explain to a friend about the impact of pollinators?

CAREER FOCUS AREA

Natural Resources Systems

REFERENCES

How to Build a Pollinator Garden, <https://www.fws.gov/midwest/news/PollinatorGarden.html>

Agriculture, Food and Natural Resource Value Chain, [FFA.org/value-chain](https://www.ffa.org/value-chain)

What Is a Butterfly? <https://www.enchanted-learning.com/subjects/butterfly/allabout>

Pollinator Garden Plan for Attracting Bees, <https://www.gardeners.com/how-to/pollinator-garden-design-for-bees/9144.html>

Plant a Butterfly Garden, <https://www.lowes.com/n/how-to-plant-a-butterfly-garden>

BASF Teams Up With Farmers, Golf Courses to Revive Monarch Butterfly Population, <https://www.basf.com/us/en/media/featured-articles/Sustainability/BASF-gets-farmers-golf-courses-on-board-to-revive-monarch-butterfly-population.html>

APPENDIX

Appendix 4: Protecting Pollinators

Protecting Pollinators

FFA sponsors are part of a national collaborative to restore monarch populations.

Monarch butterflies have experienced significant declines over the last 20 years. A group of scientists, conservationists, corporate leaders and farmers is working to increase their populations. The group, known as the Monarch Collaborative, and organized by the Keystone Policy Center, includes FFA sponsors Bayer Crop Science, BASF, Corteva Agriscience and Syngenta.

“We know that agriculture is well-equipped to provide habitat for the monarch, so we identified an opportunity to reach out to farmers and provide resources and information to support their efforts,” explains Chip Shilling, manager of sustainability and issues management at BASF.

Collaborative members introduced efforts to support monarch butterfly populations in agricultural landscapes, according to Aimee Hood, head of regulatory and scientific engagement for Bayer.

“[The collaborative] was a convener of many of the key players in the agricultural sector that wanted to make a positive impact in this space,” Hood adds.

BASF, Bayer, Corteva and Syngenta have all launched their own pollinator initiatives. BASF established The Living Acres #MonarchChallenge and has provided 60,000 milkweed stems. Corteva planted pollinator habitat at many of its U.S. locations as part of its program, Corteva Grows Pollinator Habitat. Syngenta created Operation Pollinator, a global initiative that provides wildflower seed mixtures for pollinators, and Bayer established monarch habitat at 70 of its research and manufacturing sites.

In addition to their individual efforts, the organizations recognized the

potential to join together for an even bigger impact. “We need to have all hands on deck,” says Corteva research scientist Chad Boeckman.

Caydee Savinelli, stewardship team and pollinator lead for Syngenta, hopes that spreading messages about the essential role pollinators play in the ecosystem, including agriculture, will encourage farmers to preserve and plant habitat for monarch butterflies.

“Farmers are good stewards of the land,” Savinelli says. “It’s about how we can work together to expand our reach by working with many stakeholders and getting more seeds in the ground, and that starts with learning to appreciate the work that pollinators do.”



NAME: _____

Aligned to the following standards:
CS.01; CS.02; CS.05; FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-M;
FFA.CS-N; FFA.CS-O; AG1; AG2; AG5; CCSS.RI.9-10.2; CCSS.RI.9-10.4; CCSS.SL.9-10.4;
CRP.02; CRP.04; CCSS.W.9-10.2; CCSS.W.9-10.4

Appendix 4: Protecting Pollinators

Created: Fall 2020 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "Protecting Pollinators" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.

1. Populations of the iconic pollinator have experienced significant _____ over the last _____ years.
2. A group of scientists, conservationists, corporate leaders and farmers are working to increase them through habitat creation and restoration. What is the group known as? _____
 - a. What groups are part of this collaboration? _____, _____ Agriscience and _____
3. In the space below, explain what each of these companies has done for the pollinator initiatives:



4. Summarize the article in one sentence:

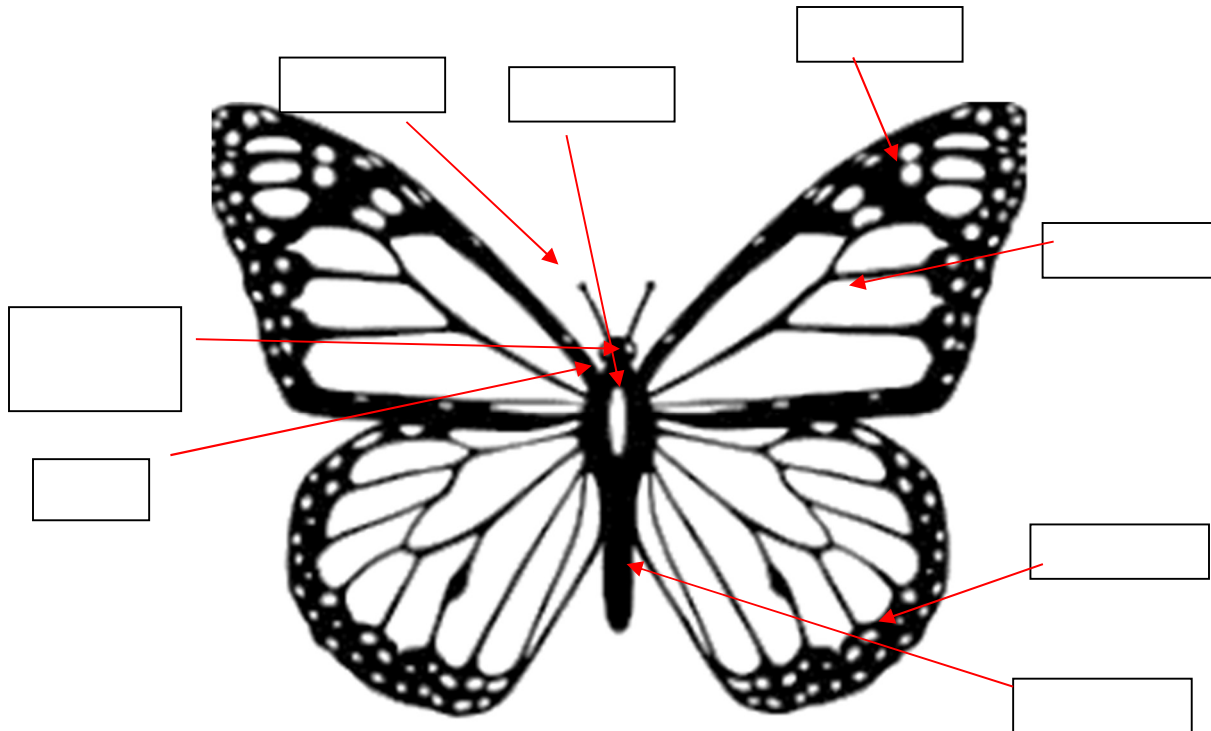
NAME: _____

DIRECTIONS:

Part 2

Use the following website, or a similar one, to label the different parts of the butterfly:

<https://www.enchantedlearning.com/subjects/butterfly/allabout/>.



What is the life cycle of a butterfly? Draw each step of the life cycle in the boxes below (one in each box). Then, describe each step.

	What type of habitats are most butterfly species found in?	

NAME: _____

DIRECTIONS:

Part 3

Use the space below to design a pollinator garden. Use the following websites, or similar ones, to aid in your research and design: <https://www.basf.com/us/en/media/featured-articles/Sustainability/BASF-gets-farmers--golf-courses-on-board-to-revive-monarch-butterfly-population.html>, <https://www.fws.gov/midwest/news/PollinatorGarden.html> and <https://www.gardeners.com/how-to/pollinator-garden-design-for-bees/9144.html>.

Before designing your garden, let's do some research about what you will need. Use this website to help with your research: <https://www.fws.gov/midwest/news/PollinatorGarden.html>.

What is the best location for your garden?



What is the best type of plants and why?

What do you need to know to prep your garden area?



Use this space to design your pollinator garden.

List the supplies (specific plants) you will need for your garden:

Research where you can buy the supplies needed for the butterfly pollinator garden. What is one place you can purchase the items from?



DIRECTIONS:

Part 4

Use the following website to complete the activities below: FFA.org/value-chain/.

Complete the questions below to learn the impact of a pollinator garden on the Agriculture, Food and Natural Resources (AFNR) Value Chain.



1. What role/impact do pollinators have in each step of the chain? Provide your answer next to each step of the chain identified below.



R&D



Pre-Production



Production

Value Chain



Supply Chain



End Product

What is one fact you learned about the AFNR Value Chain?



Sales, Service
& Support

After reviewing and learning about each step in the value chain, what is one question that you still have?



Consumers



NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

HOW TO #SPEAKAG WITH CONSUMERS

Understanding consumers and where they gain information about the agriculture industry is critical, but we also need to know how we can best share accurate information. Discover how we can educate the public in a world that is full of information.

Bell Ringer

You meet someone while out shopping who insists that brown cows produce chocolate milk. How would you explain to this person that all cows produce white milk and chocolate flavoring/syrup is simply added to produce chocolate milk?

Discussion Questions

1. Where do consumers get the majority of their information about the agriculture industry?
2. What are some effective methods for communicating with consumers about food production and food safety?
3. How can you prepare to share agriculture's story with consumers?

Activity

Part 1: Hand out the worksheet "How to #SpeakAg With Consumers" (Appendix 5). Have students read the article "How to #SpeakAg With Consumers" in the fall 2020 issue of FFA New Horizons and complete the worksheet activities. Once students have recorded their thoughts, have students get into small groups to discuss their answers. Have one person from each group record thoughts and then share with the class.

Part 2: Being able to advocate for agriculture is very important in the fast-paced world that we live in today. But what does advocacy even mean? Have students work through the following module, FFA.org/AdvocacyExperience/LetsAdvocate/#!/, to learn about advocacy. They should complete the activities as they go through each step. Once they have learned about advocacy, students will continue to follow the module to learn about SMART goals and how to apply them by developing SMART goals.

Part 3: Now that students understand what advocacy is, it is their turn! Using what they have learned, have students develop a two- to three-minute speech to advocate for something important to them. Examples: agriculture, why the school should put in a different athletic turf, etc.

The speech must follow the guidelines in the provided rubric. Students should use the outline to help plan and compose their speech: (1) What are your objectives? Identify three, (2) Introduction, (3) Body of the speech to address your three objectives and (4) Conclusion. Have students write out their speech and then practice prior to giving their speech in front of the class.

FFA Tip

Students can continue to hone their ability to talk to consumers by participating in the prepared public speaking LDE.

SAE Tip

Challenge students to create a list of ways to educate people about agriculture. Next, challenge students to select one method from their list and describe an SAE program or future career using that method. Last, have students describe ways, through employment or business ownership, to earn income with these methods.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.01 • FFA Precepts: FFA.PL-A, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.CS-N • Common Career Technical Core: AG.1 • Common Core – Writing: CCSS.ELA.W.9-10.2 • Common Core – Speaking and Listening: CCSS.SL.9-10.4 • AFNR Career Ready Practices: CRP.02, CRP.04, CRP.06, CRP.07, CRP.08 • P.21 Skills: COMMUNICATION, CRITICAL THINKING AND PROBLEM SOLVING, FLEXIBILITY AND ADAPTABILITY, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Agricultural advocate
Agricultural literacy
Census
Communication

EXIT TICKET

Why is it important to be able to talk to people about important topics?

CAREER FOCUS AREA

Any

REFERENCES

Agricultural Advocacy and Literacy Module, FFA.org/advocacy-experience

RELATABLE LINKS

Ag Literacy and Advocacy, FFA.org/ag-literacy-and-advocacy/

Effective Advocacy Model Resources, <https://FFA.app.box.com/folder/53004693036>

Experience Guides, <https://FFA.app.box.com/s/s514m27vbd577v5fg7pyvwnwdd5h218sj>

Prepared Public Speaking LDE, FFA.org/participate/prepared-public-speaking/

APPENDIX

Appendix 5: How to #SpeakAg With Consumers



“My associate degree will be 100 percent paid for, thanks to my FFA scholarship and membership in my college’s honors program,” Medina says.



Earning to Learn

More than 600 different scholarships are available for FFA members. Could one make the difference in your education?

As part of its commitment to develop career success through agricultural education, the National FFA Foundation – with financial support from businesses and individuals – awards more than \$2 million in postsecondary scholarships each year, including for trade schools and two-year programs. Applications for the 2021-22 National FFA Scholarship Program will open in November and close in January. Any FFA member currently enrolled as a senior in high school or as a freshman, sophomore or junior in college can apply. One single application enters you for multiple scholarship opportunities.

“Make applying for scholarships your most important thing,” says Sarahi Medina, a 2020-21 recipient of a \$2,000 John Deere scholarship. “Even if you think your chances are slim, you may actually get it, and it’s a big help.”

Medina, who served as reporter for the Buckeye FFA Chapter at Buckeye Union High School in Buckeye, Ariz., is entering her sophomore year at Estrella Mountain Community College in Avondale, Ariz., where she is majoring in animal science. She plans to transfer to the University of Arizona and pursue a career in food production.

“My associate degree will be 100 percent paid for, thanks to my FFA scholarship and membership in my college’s honors program,” Medina says. “It’s been super helpful.”

Learn more about FFA scholarships and apply at [FFA.org/scholarships](https://www.ffa.org/scholarships).

How to #SpeakAg With Consumers

In an era when consumers want to know where their food comes from and how it was grown or raised, we asked three #SpeakAg Ambassadors how to effectively communicate with consumers.

Q: Where do consumers get most of their information about agriculture?

A: In my experience, consumers get most of their information about agriculture from two main sources: personal experiences and the media. Personal experiences are very compelling and common in places like Iowa and other rural communities steeped in agricultural tradition. Even those of us who don’t live on farms, myself included, most likely know someone who is directly connected to agriculture, or we see production agriculture in our everyday lives. However, roughly 80 percent of Americans live in urban areas, according to the last census, so many people aren’t able to have these direct experiences because of where they live.

– Grace Long, Iowa

Q: What are some effective methods for communicating with consumers about food production and food safety?

A: Some examples are short, informative video clips that can be shared on social media platforms, shorter articles or fact posts about these topics, as well as in-person conversations with others. The way that you communicate with consumers varies depending on their agriculture background, age and other variables. You just have to assess your target audience and create an action plan for how you can best reach them!

– Hope Showalter, Virginia

Q: How do you prepare to share agriculture’s story with consumers?

A: The best stories are the ones that you connect with. If you can find a way to tell agriculture’s story in a way that has directly impacted you, it helps your audience develop a personal connection with agriculture. One of the best ways to achieve that is to look at it from their point of view. Once you understand why they feel the way they feel, you’ll be able to bridge the gap between their beliefs and yours.

– Devin Rossa, Arizona

Do You #SpeakAg?

To learn more about agricultural literacy and advocacy, visit [FFA.org/ag-literacy-and-advocacy](https://www.ffa.org/ag-literacy-and-advocacy).

Thank you to our Agricultural Literacy and Advocacy sponsors, Dominos, Merck, Bayer, Growth Energy, Smithfield and Valent.

NAME: _____

Aligned to the following standards:
CS.01; FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-J; FFA.CS-N; AG1; CCSS.ELA.W.9-10.2;
CCSS.ELA.SL.9-10.4; CRP.02; CRP.04; CRP.06; CRP.07; CRP.08

Appendix 5: How to #SpeakAg With Consumers

Created: Fall 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "How to #SpeakAg With Consumers" in the fall 2020 issue of *FFA New Horizons* and complete the activities below.

Where does the article state that consumers get most of their information about agriculture?

1. _____
2. _____

What are the pros and cons to consumers receiving most of their agricultural knowledge from these two sources?

What methods have been deemed most effective in communicating with consumers about food safety and production?

1. _____
2. _____
3. _____

Advocate

How do you determine which method will be the most effective?

How can you effectively communicate with others about agriculture?



Part 2

DIRECTIONS:

Being able to advocate for agriculture is very important in the fast-paced world that we live in today. But what does advocacy even mean? Work through the following module, FFA.org/AdvocacyExperience/LetsAdvocate/#/, to learn about advocacy. Complete the activities as you go through each step.

Identify one fact and one fiction card that were most surprising to you. Describe why.

- Fact:
 - Why?
- Fiction:
 - Why?

What is an advocate?

What is advocacy?

What is literacy?

NAME: _____

In your own words, describe what each step in the "Steps to Effective Advocacy" model means.

PLAN

DEVELOP

DO

REFLECT

STEPS TO Effective Advocacy

After you have successfully passed the quiz, select the "peers" category and complete the following questions.

1. Which issue(s) did you identify that exist in your school?
2. What information would be relevant to know to advocate to your peers? List them here.

It is important to have goals when you plan to advocate. Identify and describe the best components when developing goals.

S =

M =

A =

R =

T =

NAME: _____

To practice applying what you just learned about goal setting, develop three SMART goals for yourself. The goals can be for anything in your life. Example: study skills, athletics, FFA, SAE, etc.

1.

2.

3.



In your own words, identify the meaning of each word below as it relates to advocating.

- Collaborate:
- Execute:
- Raise Awareness:

Part 3

DIRECTIONS:

Now that you understand what advocacy is, it is now your turn! Using what you have learned, develop a 2- to 3-minute speech to advocate for something important to you. Examples: agriculture, why the school should put in a different athletic turf, etc.

The speech must follow the guidelines in the attached rubric. Use the outline to help plan and compose your speech.

1. What are your objectives? Identify three.
2. Introduction
3. Body of the speech to address your three objectives
4. Conclusion

Why is it important to reflect when you complete an advocacy project?



Topic:

Objective 1:

Objective 2:

Objective 3:



NAME: _____

Speech Rubric

Qualification	Very strong evidence of skill is present (5-4 pts)	Moderate evidence of skill is present (3-2 pts)	Weak evidence of skill is present (1-0 pts)	Total Points (40 possible)
Presentation Skills	Is thorough and maintains eye contact	Somewhat professional and depends on the presentation	No evidence of preparation	
Objectives	Written in SMART format and support the selected topic	Only two of the goals are written in SMART format and support the overall topic.	One or less goals are written in SMART format and/or lack support of the main topic.	
Introduction	Adequately introduces each goal and their importance	Introduction lacks clarity for the rest of the speech.	Introduction is overall weak and does not adequately set up the content for the speech.	
Body of Speech	Each goal is directly discussed in detail.	Only two goals were discussed, or they lacked clarity.	Less than two goals were discussed, or clarity was greatly lacking.	
Conclusion	The conclusion revisited the goals and adequately summarized the main points.	The conclusion did not revisit all the main points and/or lacked strength.	The conclusion lacked clarity and strength.	
Grammar/Punctuation/Spelling	Spelling, grammar and punctuation are extremely high quality with two or less errors in the document.	Spelling, grammar and punctuation are adequate with three to five errors in the document.	Spelling, grammar and punctuation are less than adequate with six or more errors in the document.	
Time	Two minutes or more	Between one and two minutes	Under one minute	
Overall Impression	Presentation was professional, and presenter thoroughly explained his or her plan/idea.	Presentation was complete but lacked some detail.	The presentation lacked polish and information.	
			Total	/40



NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

URBAN AG OASIS

A leader in grain production and home to innovators such as John Deere, Corteva Agriscience, Kemin Industries, the World Food Prize, FarmHer and more, Iowa is deep-seated in agriculture and rural experiences. Typically, FFA in Iowa has focused on rural communities. However, the trend today is urban. Read this article to learn about the new chapters in some of the state's largest cities.

Bell Ringer

Why do you think agricultural education programs are trending in urban settings?

Discussion Questions

1. What are some large cities in your state? Do you know if they have FFA chapters/agricultural education programs? If so, what cities are those located in?
2. What activities that your FFA chapter (or your school) does could be done in an urban setting?
 - a. What are some changes/modifications that would need to be made to those activities for them to work in an urban setting?
3. Do you think agricultural programs in urban settings can have an impact on consumers? Explain your answer.

Activity

Part 1: Hand out the worksheet "Urban Ag Oasis" (Appendix 6), and have students complete it as they read the article "Urban Ag Oasis" in the fall 2020 issue of *FFA New Horizons*.

Part 2: Students will use the FFA chapter locator to complete the next part. They will locate FFA chapters/agricultural education programs in major cities across the United States. [FFA.org/chapter-locator/](https://www.ffa.org/chapter-locator/)

Part 3: Students will complete the graphic organizer to compare the activities that Des Moines FFA Chapter does with their chapter (or school club/sports team).

FFA Tip

Start a "FFA Chapter Exchange" with an urban FFA chapter/agricultural education program. As a rural FFA chapter or as an urban FFA chapter, you can learn new things to bring back to your own chapter. This can be as simple as putting a box together of various items that represent agriculture in your town/state and items that represent your FFA chapter/school.

Read this article to learn how two FFA chapters in Minnesota and Alabama take it to the next level and some members travel to visit each other's states and learn about agriculture in the state. <https://www.agweek.com/business/agriculture/4956036-FFA-chapter-tends-a-classic-North-South-FFA-exchange>

SAE Tip

Introduce the school-based enterprise SAE type to your students. Challenge them to design a school-based enterprise using resources available through your agriculture department and school. Are there resources your program could add to enable such SAEs? Can the designed enterprises be implemented by students at home or in locations other than the school?

STANDARDS ALIGNMENT

FFA Precepts: FFA.PL-A, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-M, FFA.CS-N, FFA.CS-O • **Common Core – Reading: Informational Text:** CCSS.RI.9-10.2, CCSS.RI.9-10.4 • **Common Core – Writing:** CCSS.W.9-10.2, CCSS.W.9-10.4 • **Common Core – Speaking and Listening:** CCSS.SL.9-10.2, CCSS.SL.9-10.4 • **AFNR Career Ready Practices:** CRP.02, CRP.04 • **P21 Skills:** COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Innovators	Symposiums
Geneticists	Tilapia
Bonobos	Hydroponics
Cognitive	Enrichment
Wind Turbine	

EXIT TICKET

What are three things you learned from today's lesson? What is one question you still have after completing the activities?

CAREER FOCUS AREA

Agricultural Education

REFERENCES

FFA Chapter Locator: [FFA.org/chapter-locator/](https://www.ffa.org/chapter-locator/)

Top 50 Cities in the U.S. by Population and Rank: <https://www.infoplease.com/us/cities/top-50-cities-us-population-and-rank>

RELATABLE LINKS

FFA Chapter Tends a Classic North-South FFA Exchange, <https://www.agweek.com/business/agriculture/4956036-FFA-chapter-tends-a-classic-North-South-FFA-exchange>

APPENDIX

Appendix 6: Urban Ag Oasis





Urban Ag Oasis

A hands-on approach to learning gives city students from **Des Moines, Iowa**, career insights, employable skills and leadership opportunities through FFA.

By Beth Eslinger

Photography by
Dan Videtich



**Des Moines
FFA member
Paige Baney**



A leader in grain production and home to innovators such as John Deere, Corteva Agriscience, Kemin Industries, the World Food Prize, FarmHer and more, Iowa is deep-seated in agriculture and rural experiences. While FFA in Iowa has commonly focused on rural communities, the trend today is urban. With new chapters in some of the state's largest cities and a significant growth in the Des Moines FFA (within the state's largest population center at 645,000), the FFA tenets of leadership and career development are resonating with urban youth.

Within the past year and into the coming year, seven chapters have started or will start in some of the largest schools in the state, including Sioux City and Ames. "Ag education interest in Iowa in our population centers is encouraging," says Iowa FFA Association Executive Director Scott Johnson. In the past decade, FFA membership has grown 30 percent in the state, says Johnson, with current participation at 16,000.

What draws urban students to take agriculture classes and become FFA members? The reasons are as varied as the

students, but, in most cases, the opportunity to learn about land and livestock inside the city limits is too interesting and accessible to pass up.

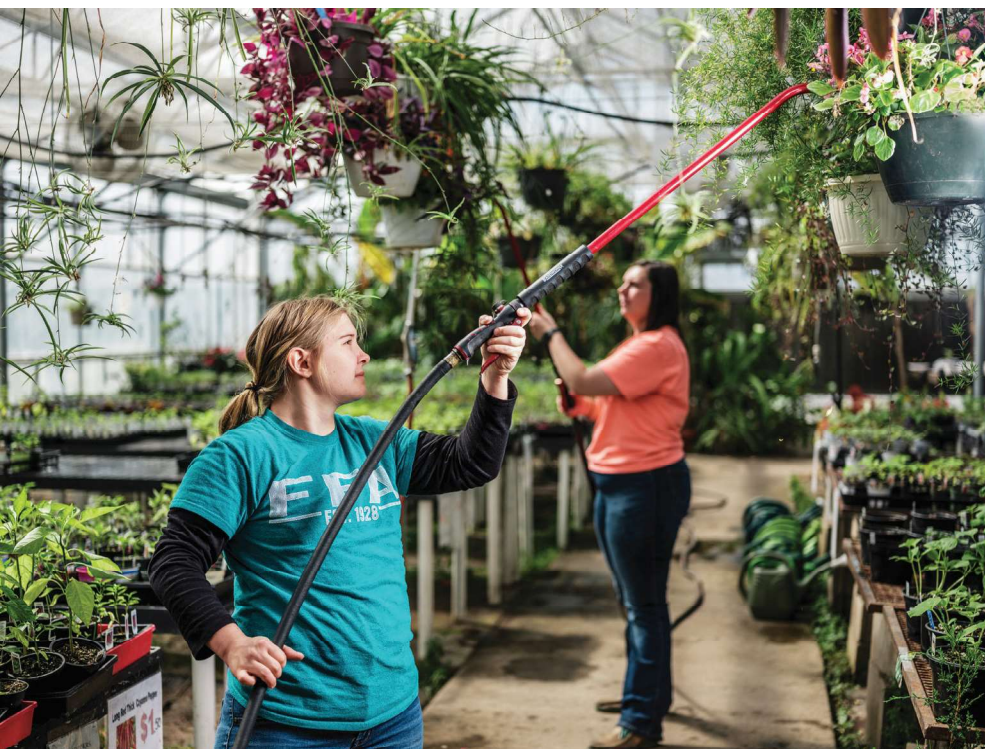
Diverse Ag Experiences

In the Des Moines FFA Chapter (a female-majority group that is one-third ethnic minorities), the focus is preparing the next generation of geneticists, veterinarians, scientists and more through hands-on learning. The chapter, which began in 1975, has seen consistent growth over the past four years. "Because our members don't come from farm backgrounds," says FFA advisor and animal science teacher Kevin Anderson, "we're not heavy into traditional production agriculture." Those lessons are taught, though.

Ag education students come from seven area high schools to study current issues in the state and beyond. "We participate very much in nontraditional events," says Anderson, who is an FFA alumnus from central Iowa. Recent science fair projects at the city and state levels had members researching cognitive abilities in bonobos (the renowned Ape Cognition and Conservation Initiative is located nearby and studies bonobos), tracking consumer greenhouse trends, making a wind turbine to check energy output and analyzing egg nutritional values. A winter 2020 competition had members exploring the complexities of the cattle industry through role-playing as a grower, environmentalist, fast-food franchise owner and low-income mother. Meetups with state legislators and Iowa's governor, Kim Reynolds, provide opportunities for chapter members to discuss current issues and develop communication skills. Horse-judging competitions offer additional growth opportunities.

During their monthly meetings, FFA members talk about activities, competitions, legislative symposiums, swine and egg judging and more. "We come together to grow relationships; we all have to be informed," says chapter reporter Emma Ashton. Passionate about photography, Ashton is currently working on a visual look book for her chapter to inspire city youth about agriculture. She's also researching the ways fire affects the safety of animals at zoos and conservation centers through a World Food Prize junior competition.

Members looking for traditional farming experiences can find those through the program too. In 2020, 45% of FFA members here raised animals, including sheep, goats, chickens and rabbits. "We do from birth to finish," Anderson says. "Kids get to see every step of the animal." Last year, member and current high school senior James Hughes won the Grand Champion Laying Bird, a barred rock breed. This year, Ashton raised a



Top: Emma Ashton and Jocelynn Holman work at the school's 11-acre ag facility. Bottom: Natalie Royce and Silvia Poore water plants in the school's greenhouse. Opposite: Lauren Chayet pauses with poultry.



**In 2020,
45%**

of FFA members
here raised
animals, including
sheep, goats,
chickens
and rabbits.



Above: Bailey Smith feeds the goats at the ag facility. Opposite: The school's greenhouse brims with plants and pops of color.

Moines FFA Chapter.

At a local grocery store last fall, several FFA members promoted pork grown by area youth by handing out samples, cookbooks and meat thermometers from the Iowa Pork Producers. The students who raised the pigs donated one to a local food bank; the remaining 11 pigs were sold at a local grocery.

Members have also packaged dry food for Meals from the

meat goat kid for the fair. It was her second year showing animals.

Members also have an opportunity for community outreach with their animals and through volunteerism through the Des

Heartland, which serves lower-income residents throughout the nation and across the globe, and they have made fleece blankets for the city's Ronald McDonald House.

"Through the FFA program, students saw what they liked and were able to create more experiences for themselves," says senior and first-year member Eva Button.

Buzzing With Life

The Des Moines FFA Chapter is available through the Des Moines Public Schools' Environmental & Agricultural Sciences Academy. Students from five Des Moines schools and two suburban schools bus each day to an 11-acre farm on the city's south side to attend horticulture and animal science classes.

The ag facility buzzes with life. Free-range chickens greet visitors with their inquisitive looks; ewes poke heads through the fence while lambs trail behind; bees hover among fruit trees as they pollinate; and greenhouses brim with tomato and pepper seedlings and annuals blooming in the hottest colors. A new animal science building houses aquaculture tanks for raising tilapia. A greenhouse gives students experiences with hydroponics and allows them to harvest greens and cucumbers for salad days prepared during class. Students spend time handling animals (including mucking out stalls), transplanting seedlings in the greenhouse, testing soil samples and identifying trees in the nearby woods.

Internships with local businesses, such as turf management at a golf course adjacent to the ag facility, give students additional hands-on opportunities. Additionally, students working and volunteering in ag- and food-related jobs, such as grocery stores and the zoo, can gain college credit for their efforts. Many Des Moines FFA members pursue agricultural jobs due to their experience.

"I've always had a passion for horses. I wanted to be an equine vet," says Ashton, noting it's difficult to find large-animal specialists in the city. "I decided to broaden the spectrum," she adds, to work with more than horses. "The classes helped me solidify that I want to go into the ag career path."

For Button, it was her passion for plants that piqued her interest in the academy and FFA. Based on her work potting poinsettias, cloning plants, making cuttings and maintaining the hydroponic system, she is planning a career in plant genetics and attending Iowa State University in the fall. •

AG IN ACTION



Both the horticulture and animal science departments through the Des Moines Public Schools' Environmental & Agricultural Sciences Academy give students real-life opportunities to run businesses.

Each spring, the FFA plant sale raises about \$75,000. All the proceeds stay in the ag education department and provide student enrichment. In 2019, second-year students were awarded a free trip to Thailand.

As part of their curriculum, students learn the science behind the plants they grow and identification basics. Most years, they work the sales floor, helping customers with their selections. This year, due to the COVID-19 pandemic, horticulture and environmental science teacher

Craig Nelson worked with adult volunteers on a drive-up and virtual sale.

Later in the year, a small on-site, student-run grocery store will sell pork, lamb, chickens, honey and more produced at the urban farm. The students are responsible for setting up the store, including hours, pricing and staffing. The store will also feature goods made by students of other Des Moines Public Schools career-training programs, including T-shirts created by graphic design students and signs fabricated by the welding class. A local business, Fareway Meat & Grocery, contributed \$30,000 for the store and is serving as a model for the store setup.





NAME: _____

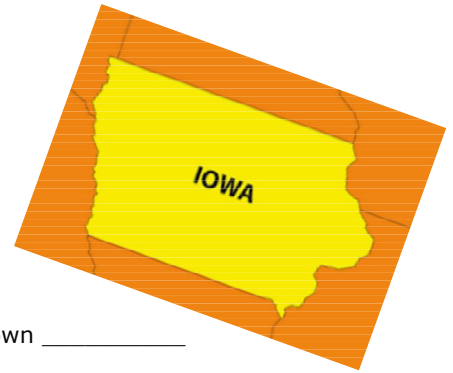
Appendix 6: Urban Ag Oasis

DIRECTIONS:

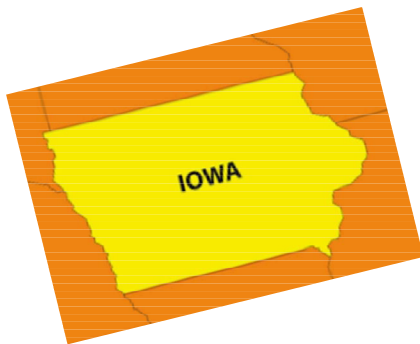
Part 1

Read the article "Urban Ag Oasis" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.

1. Iowa is a leader in grain production and home to innovators such as _____, _____, _____, _____, the _____ Food _____, _____ and more.
2. While FFA in Iowa has commonly focused on rural communities, the _____ today is _____.
3. Within the past year and into the coming year, _____ chapters have started or will start, in some of the _____ schools in the state including _____ City and _____.
4. Iowa FFA Executive Director said in the past decade, FFA membership has grown _____ percent in the state.
 - a. 35 percent
 - b. 25 percent
 - c. 20 percent
 - d. 30 percent
5. Iowa FFA Executive Director Scott Johnson also said current FFA participation in the state is at _____.
 - a. 15,000
 - b. 17,000
 - c. 16,000
 - d. None of the above



6. What is the draw for urban students to take agriculture classes and become FFA members?



Are there urban FFA chapters/agriculture programs in your state? If so, what cities are those located in? Hint: Use the FFA chapter locator to help with your answer: [FFA.org/chapter-locator/](https://www.ffa.org/chapter-locator/).

NAME: _____

DIRECTIONS:
Part 2

Using the FFA chapter locator, locate FFA chapters in major cities across the United States. (*Utilize this website, or one similar, to help with your search of the major cities in the U.S. : <https://www.infoplease.com/us/us-cities/top-50-cities-us-population-and-rank>.*) The FFA chapter located can be found at <https://www.ffa.org/chapter-locator/>. (Locate at least 10 FFA chapters in the major U.S. cities.) See below for an example.

Los Angeles-Paul
Revere Charter
Middle FFA; Los
Angeles, CA



What is the nearest
major city closest to
your town?

Were you surprised by some of the
cities that have FFA chapters? Why
or why not?

NAME: _____

DIRECTIONS:

Part 3

Complete the graphic organizer below to compare the activities that Des Moines FFA Chapter does with your chapter (or school club/sports team).

Outside the circle, write things that your FFA chapter and agriculture program (or club/sports team) do that are different.
(Write these in any blank space outside the circle. Write at least five things.)



What are things that the Des Moines FFA Chapter does?
Write at least five things.

What are things that you do that are the same or similar?

What is something you learned from this article that you can use in your FFA chapter (or school club or sports team)?

Summarize the article in one sentence:



NEW HORIZONS

Fall 2020 TEACHING GUIDE



ARTICLE SUMMARY

BULRUSH IN THE BAYOU

Read this article to learn how an FFA chapter in Louisiana is helping to restore wetlands in the state.

Bell Ringer

Describe what you think a wetland/swamp is. Are there any in your area?

Discussion Questions

- Where is the closest wetland/swamp/marsh to your area?
 - How does it impact your local economy?
 - How does it impact the wildlife in the area?
 - How does it impact the AFNR Value Chain?

Activity

Part 1: Hand out the worksheet "Bulrush in the Bayou" (Appendix 7), and have students complete it as they read the article "Bulrush in the Bayou" in the fall 2020 issue of *FFA New Horizons*.

Part 2: Students will utilize AgExplorer, [AgExplorer.com](https://www.agexplorer.com), to learn about careers related to wetlands and/or the environmental service systems career focus area. Students will research the careers to learn about recommended high school courses and education/training required.

Part 3: Next, students will learn about wetlands and why they are important. Students will utilize this website (or one similar), <https://www.nps.gov/subjects/wetlands/why.htm#:~:text=Wetlands%20are%20highly%20productive%20and,provide%20wildlife%20habitat>, to help them answer questions on the worksheet.

Part 3: Last, students will design a wetland for their backyard or an area in town. Students should use this website, or one similar, <https://www.nwf.org/Magazines/National-Wildlife/1997/How-to-Create-a-Mini-Wetland>, to help with their research and design.

FFA Tip

Invite a representative from your local Natural Resources Conservation Service (NRCS) to speak to your classes and/or FFA chapter about wetlands/swamps and how they impact the overall environment.

Students can also develop and teach a mini-lesson to local elementary students about wetlands/swamps.

SAE Tip

Are there agriculturally related service projects opportunities like wetland restoration, erosion control, community gardens, etc. in your area? Work with your students to help them establish Service-Learning SAE projects to accomplish these. Take the weight off of your shoulders and let students benefit from taking the lead and being recognized.

STANDARDS ALIGNMENT

AFNR Performance Element: CS.05 • FFA Precepts: FFA.PL-A, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-M, FFA.CS-N, FFA.CS-O • Common Career Technical Core: AG.5 • Common Core – Reading: Informational Text: CCSS.RI.9-10.2, CCSS.RI.9-10.4 • Common Core – Writing: CCSS.W.9-10.2, CCSS.W.9-10.4 • Common Core – Speaking and Listening: CCSS.SL.9-10.2, CCSS.SL.9-10.4 • AFNR Career Ready Practices: CRP.02, CRP.04 • P21 Skills: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

VOCABULARY

Bulrush reeds	Wetland
Erosion	Ecosystem
Marsh	Bayou
Perennial	

EXIT TICKET

How would you explain the impact of wetlands/swamps to a friend?

CAREER FOCUS AREA

Natural Resources Systems

REFERENCES

Why Are Wetlands Important?: <https://www.nps.gov/subjects/wetlands/why.htm#:~:text=Wetlands%20are%20highly%20productive%20and,provide%20wildlife%20habitat>

How to Create a Mini-Wetland : <https://www.nwf.org/Magazines/National-Wildlife/1997/How-to-Create-a-Mini-Wetland>

AgExplorer: [AgExplorer.com](https://www.agexplorer.com)

Wetland Gardens and Bog Gardens, <https://ferncreekdesign.org/wetlandsgarden.html>

RELATABLE LINKS

Natural Resources Conservation Service-USD: <https://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/>

Backyard Wetland, https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/features/?cid=nrcs143_023525

Wetland, <https://www.buildwithrise.com/stories/sustainable-landscaping-with-a-mini-wetland>

APPENDIX

Appendix 7: Bulrush in the Bayou

BULRUSH IN THE BAYOU

THE SPRINGFIELD FFA CHAPTER IS HELPING TO RESTORE LOUISIANA WETLANDS.

— By Jodi Helmer

Every June, a group of Springfield High School students pulls on rubber boots and steps into the swamps near Springfield, La., with burlap bags filled with California bulrush reeds. Their goal: Plant thousands of native grasses to restore habitat, combat erosion and protect coastal communities from the effects of wind and water.

“The marshes play a big role in our communities,” says Springfield High School senior and FFA member Micaela Bono.

“It was a great opportunity for us to start from an idea and develop it into a program,” Dylan Fontenot says.

The Springfield FFA Chapter received a \$1,200 grant from the Natural Resources Conservation Service to start the project in 2016. Students established California bulrush, a native perennial that thrives in wetland marshes, in their school greenhouse and planted the mature grasses in local wetlands.

The program started as a partnership with Louisiana State University and has since morphed into a stand-alone program that focuses on wetland restoration projects in Springfield and surrounding communities. Students learn about coastal wetlands and their role in the ecosystem in a hands-on way.

“It was a great opportunity for us to start from an idea and develop it into a program,” says Springfield FFA member Dylan Fontenot. “It’s important that students get some knowledge about

wetlands to truly understand why we’re doing this.”

The Springfield FFA Chapter partners with local community groups to coordinate annual restoration projects. Conservationists choose the sites and monitor plant growth over time, and the fire department transports students into the swamps on boats and oversees water safety.

Bono admits that it’s a little stressful knowing that snakes and alligators could be lurking beneath the waters in the bayou, but focusing on the task

— driving the point of a short, sharp shovel into the ground and planting California bulrush reeds in each hole — is a good distraction. During the 2019 field day, the Springfield chapter planted 10,000 California bulrush weeds.

“It’s not the easiest task, but it’s so worth it to know that we’re making a difference in our community,” she says.

Wetlands restoration projects have become popular with Louisiana FFA chapters, according to Kendra Keen, agriscience teacher and Springfield FFA advisor. She estimates six chapters have started similar programs in the last five years.

The COVID-19 pandemic forced the chapter to cancel its 2020 restoration project. However, members plan to be back in the swamps next summer to establish more native grasses and restore wetland habitats.

“If you’re an FFA chapter in the bayou, it’s expected — just like FFA chapters in Texas are expected to show cattle,” Keen says. “We have to be out there because the community needs us.”



The Springfield FFA Chapter partners with local community groups to coordinate annual restoration projects.



Springfield High School students step into Louisiana swamps to plant native grasses and restore habitat, combat erosion and protect coastal communities.



During the 2019 field day, the Springfield FFA Chapter planted 10,000 California bulrush weeds. It’s not the easiest task, members say, but it’s worth it.

NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-M;
FFA.CS-N; FFA.CS.O; CCSS.ELA.W.9-10.2; CCSS.ELA.W.9-10.4;
CCSS.RI.9-10.2; CCSS.RI.9-10.4; CCSS.SL.9-10.2; CCSS.SL.9-10.4; CRP.02; CRP.04; CS.05; AG5

Appendix 7: Bulrush in the Bayou

Created: Fall 2020 by the National FFA Organization

DIRECTIONS

Part 1

Read the "Bulrush in the Bayou" article in the Fall 2020 issue of *FFA New Horizons* answer the following questions.

1. The _____ FFA Chapter is helping to _____ Louisiana _____.
2. What is the goal of the students when they step into the swamps?

What supplies do the students take with them to the swamp?

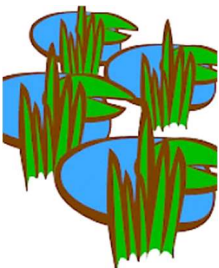
3. Where did the chapter receive their grant from? How much was the grant for?
4. What did the students do with the funds received from the grant?



Who did the chapter partner with?

5. During the 2019 field day, the Springfield chapter planted _____ California bulrush weeds?

- a. 5,000
- b. 7,000
- c. 12,000
- d. 10,000



6. How did COVID-19 affect the 2020 plans, and what do they plan to do to overcome it?

NAME: _____

Part 2

Go to AgExplorer, AgExplorer.com, to learn about careers related to wetlands. Research **five** careers that are associated with wetlands and/or environmental service systems and complete the information below about each of the careers.

Career:

Recommended High School Courses:

Education/Training Required:

Career:

Recommended High School Courses:

Education/Training Required:

Career:

Recommended High School Courses:

Education/Training Required:

Career:

Recommended High School Courses:

Education/Training Required:

Does one of these
careers interest you?

Explain your answer. If none interest you, what
career field does interest you and why?

Career:

Recommended High School Courses:

Education/Training Required:

NAME: _____

Part 3

Go to this website or one similar,

<https://www.nps.gov/subjects/wetlands/why.htm#:~:text=Wetlands%20are%20highly%20productive%20and,provide%20wildlife%20habitat>, and answer the questions below to learn more about wetlands.

1. Overall, why are wetlands important?

2. What are seven specific reasons why wetlands are important?



3. What type of wildlife habitat do wetlands provide?

4. Explain the habitat for threatened and endangered species.

Do you know of a wetland in your state or area?

If so, where is it located?

Use these sites to help with your answer: <https://www.neefusa.org/nature/land/wetlands-united-states> and <https://www.fws.gov/wetlands/data/Mapper.html>. (Click on wetlands mapper at the bottom of the page, check the wetlands box to the left and click the legend.)

NAME: _____

Part 4

Design your own wetland (for your backyard or an area in your town). Take what you have learned thus far and design your own wetland. Utilize the following website, or one similar, to design your wetland:

<https://www.nwf.org/Magazines/National-Wildlife/1997/How-to-Create-a-Mini-Wetland>.

Read the article on the above website, and apply the steps/guidelines to design your own wetland. Use the space below to sketch out your plan.

What plants did you chose to include in your wetland and why?

How can you take what you have learned about wetlands and use it in your life (future career, home, etc.)?

NAME: _____

Appendix 8: Vocabulary Activity

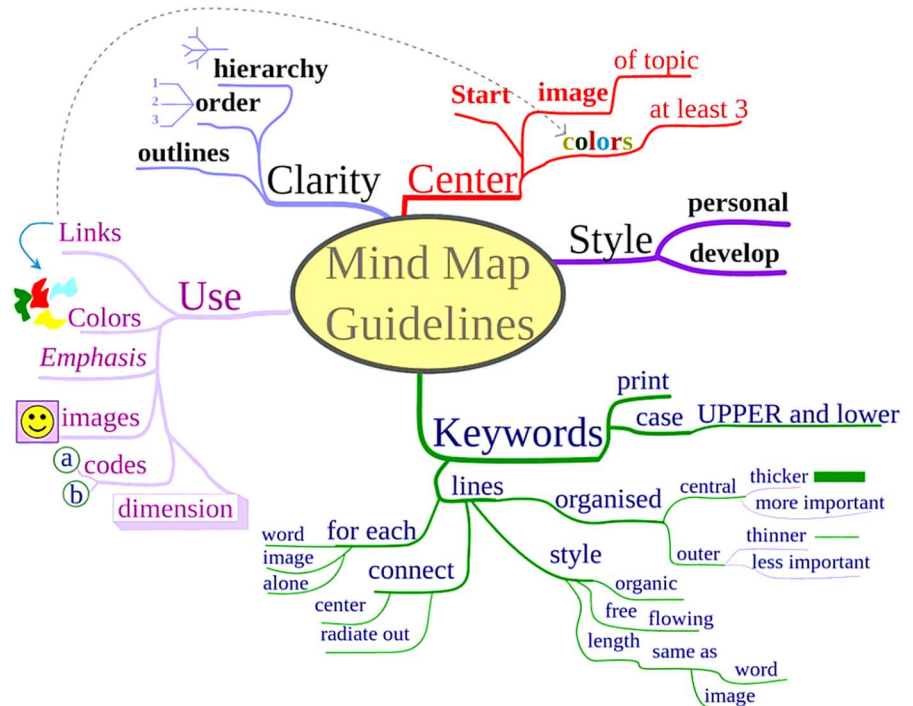
DIRECTIONS:

Use the vocabulary words listed below to complete the activity.

Activity reference: <https://www.readingandwritinghaven.com/5-brain-based-vocabulary-activities-for-the-secondary-classroom/>

Step 1: From the list, circle four words that you want to learn more about.

Step 2: From your circled words, create a mind map for each word. See example of a mind map to the right. It is an example of a mind map and includes guidelines on how to create one. Use the space on the next page to create your mind maps.



Vocabulary words:

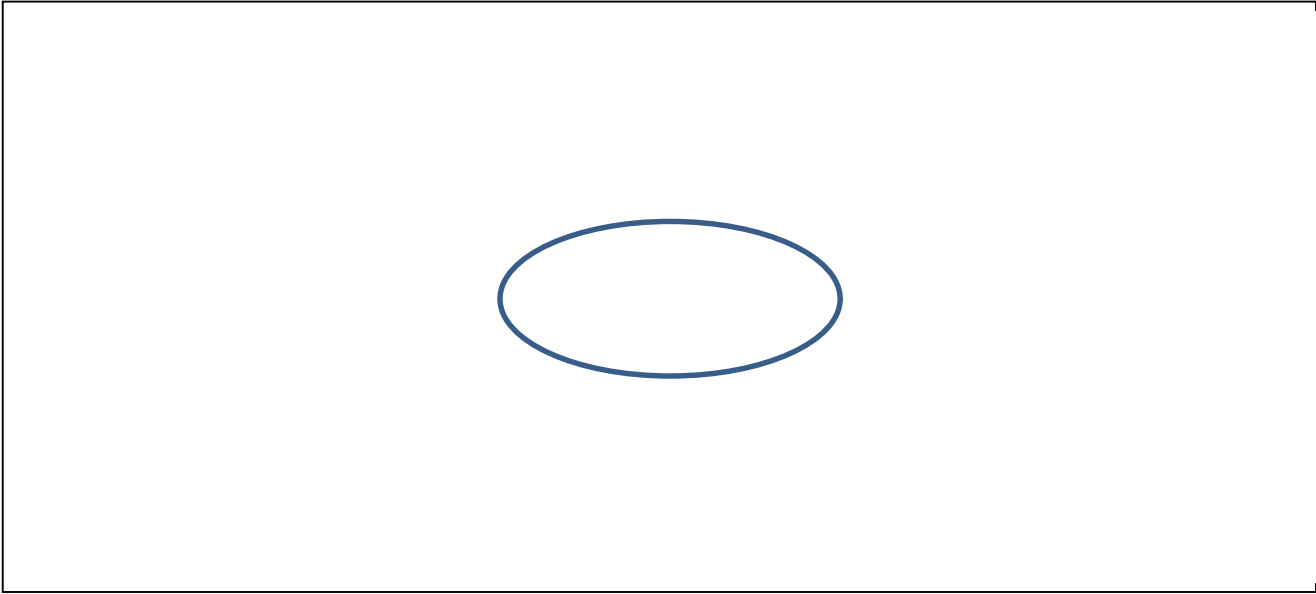
Entrepreneur
 Inventor
 Overachieve
 Perspective
 Agritourism
 Attraction
 Undertaking
 Biodiversity
 Colony
 Nectar
 Pollinator
 Pollen
 Sustainability
 Agricultural advocate
 Agricultural literacy

Census
 Communication
 Sustainability
 Pollinator
 Conservationists
 Initiative
 Habitat
 Stewardship
 Innovators
 Geneticists
 Bonobos
 Cognitive
 Wind turbine
 Symposia
 Tilapia

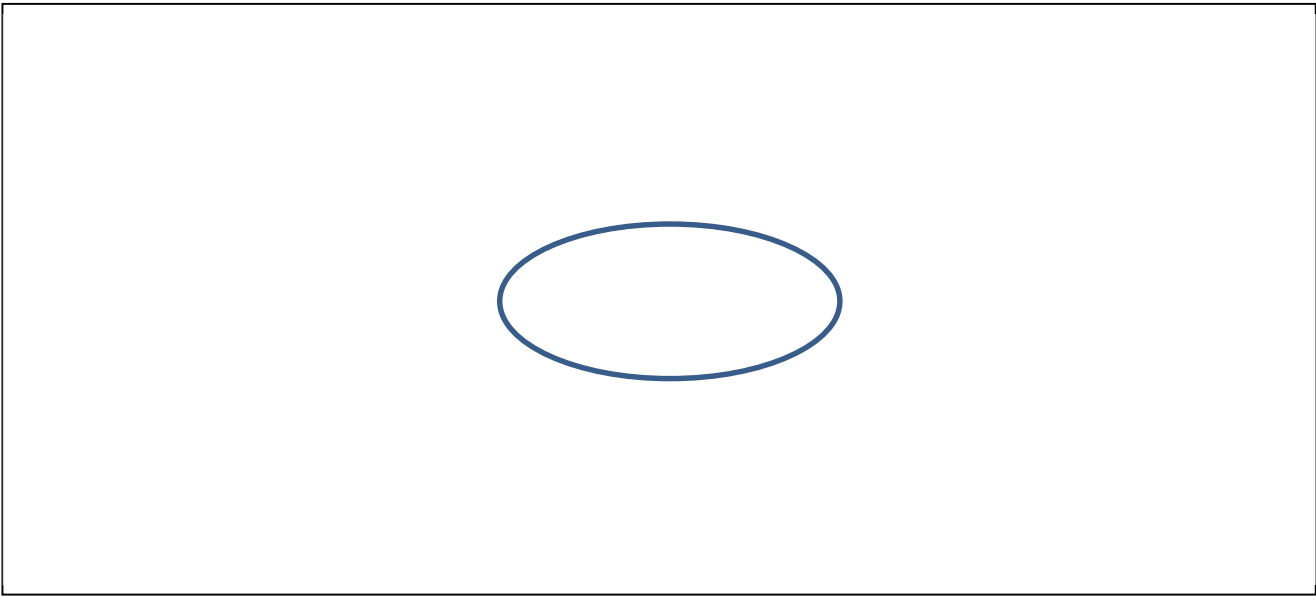
Hydroponics
 Enrichment
 Bulrush reeds
 Erosion
 Marsh
 Perennial
 Wetland
 Ecosystem
 Bayou

NAME: _____

Mind Map 1

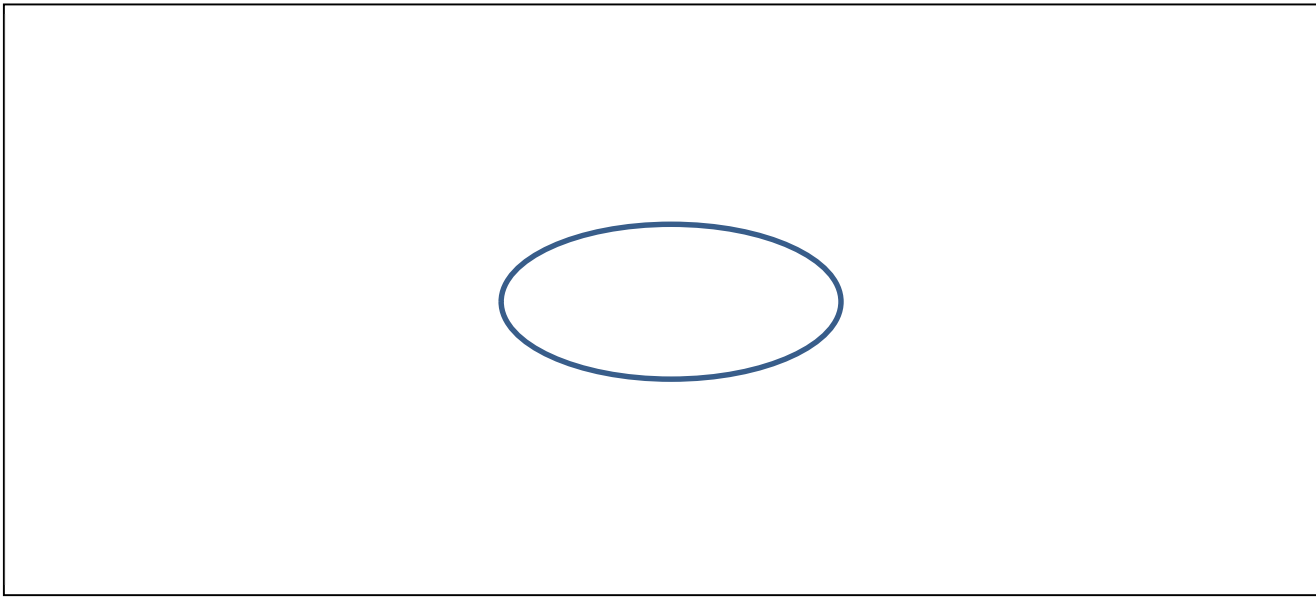


Mind Map 2

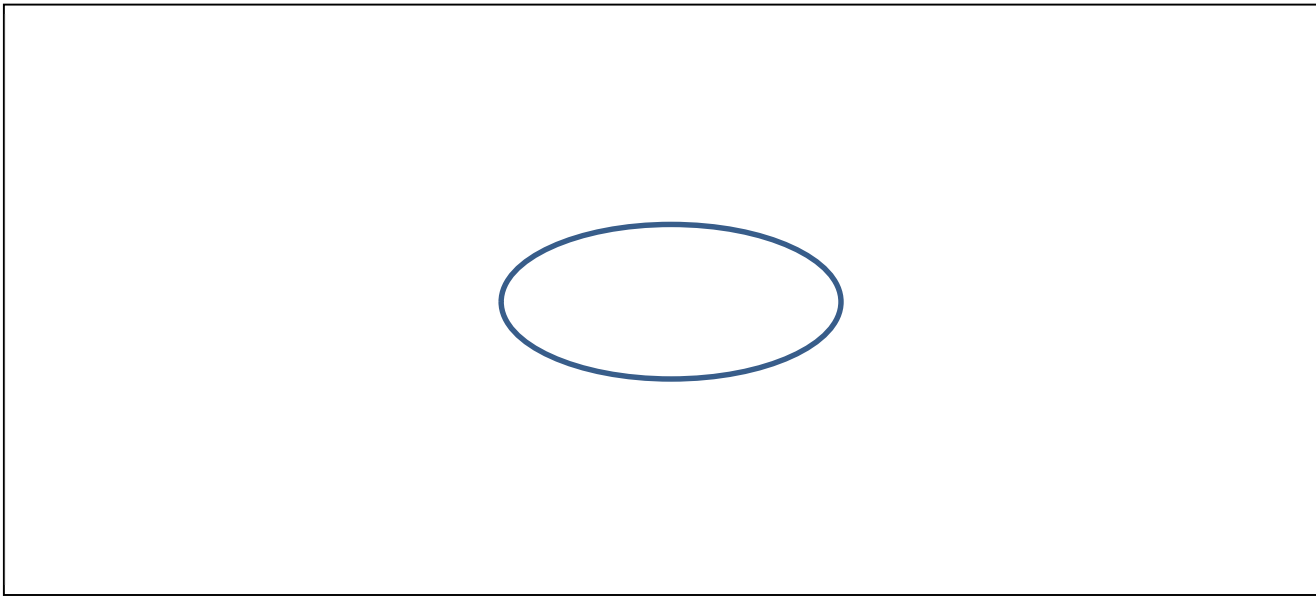


NAME: _____

Mind Map 3



Mind Map 4



ANSWER KEYS

NAME: _____

Aligned to the following standards:
CS.02; FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-J; FFA.CS-N; AG2; CRP.02;
CRP.04; CRP.07; CRP.08

KEY — Appendix 1: On the Record: Eric Shanks

Created: Fall 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "On the Record: Eric Shanks" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.

What does Eric Shanks do?

Executive Producer of Fox Sports



Where is Eric Shanks from?

- a. San Francisco, CA
- b. **Brazil, Indiana**
- c. New Orleans, Louisiana
- d. Baltimore, Maryland

What role did FFA have in preparing Shanks for his career?

FFA taught him that you should always have respect for others.



What major event does Shanks spend a large part of the year helping plan?

- a. World Series
- b. Stanley Cup
- c. Olympics
- d. **Super Bowl**

What advice does Shanks provide for FFA members? **Take on lots of different things to learn what you can really handle. "Bite off more than you can chew."**



Give a specific example of how you could use this advice in your life. **Answers will vary.**

Part 2

DIRECTIONS:

Athletics and agriculture have a very close tie. Complete the following activities to learn how agriculture and the items we associate with athletic competitions really tie together.

- (1) Review the Agriculture, Food and Natural Resources (AFNR) Value Chain below.
- (2) Select a school-appropriate, product-based favorite Super Bowl commercial (ex. Doritos).
- (3) Identify and describe how that product fits into each step of the AFNR Value Chain. Add your description to each step of the diagram. Tip: Use the following website for more information on each step in the AFNR Value Chain:

[FFA.org/value-chain/](https://www.ffa.org/value-chain/).



NAME: _____

Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PG-J; FFA.CS-N; AG1; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.4; CCSS.WHST.9.10.4; CRP.02; CRP.04; CRP.06; CRP.08

KEY — Appendix 2: The Corn Maze Craze

Created: Fall 2020 by the National FFA Organization

DIRECTIONS:

Read the article "The Corn Maze Craze" in the fall 2020 issue of *FFA New Horizons* and complete the activities below.

What does the McCall family grow?

- a. Corn
- b. Hay
- c. Honey
- ☒ d. Pumpkins

According to the article, what does McCall say is his reason for advocating for agriculture?

He wants people to leave the city and technology to experience what the farm is like.

What is the topic of McCall's supervised agricultural experience (SAE)? **Diversified agriculture**

How many different attractions has the McCall farm grown to?

- a. 5
- b. 10
- c. 30
- ☒ d. 50



What FFA conference did McCall attend in 2019 that made a large impact on his future career goals and objectives?

New Century Farmer Conference

What is the theme for the 2020 corn maze on the McCall farm?

- a. Drones
- b. "God Made a Farmer"
- c. Tractor and American Flag
- ☒ d. "Land of the Lost"

How tall does the corn tend to be when the maze is flagged for the selected design? **Knee high**

Thinking about what you just read, define agritourism.
Answers will vary. Agritourism is when visitors are brought to a production agriculture business to experience and learn about the industry.

Why do you think agritourism is so important? Give two reasons. **Answers will vary.**

- 1.
- 2.

Using [AgExplorer.com](https://www.agexplorer.com) and what you have learned about agritourism, identify two careers that would be needed to run/work at an agritourism site. **Answers will vary.**

(1)

(2)

Part 2

DIRECTIONS:

Agritourism is a very important component in every state. Complete the following activities to learn about agritourism in your state and to plan your own operation.

Thinking about your state, identify an agritourism destination that already exists.

Name: **Answers will vary.**

What makes this an agritourism location?

Answers will vary.



NAME: _____

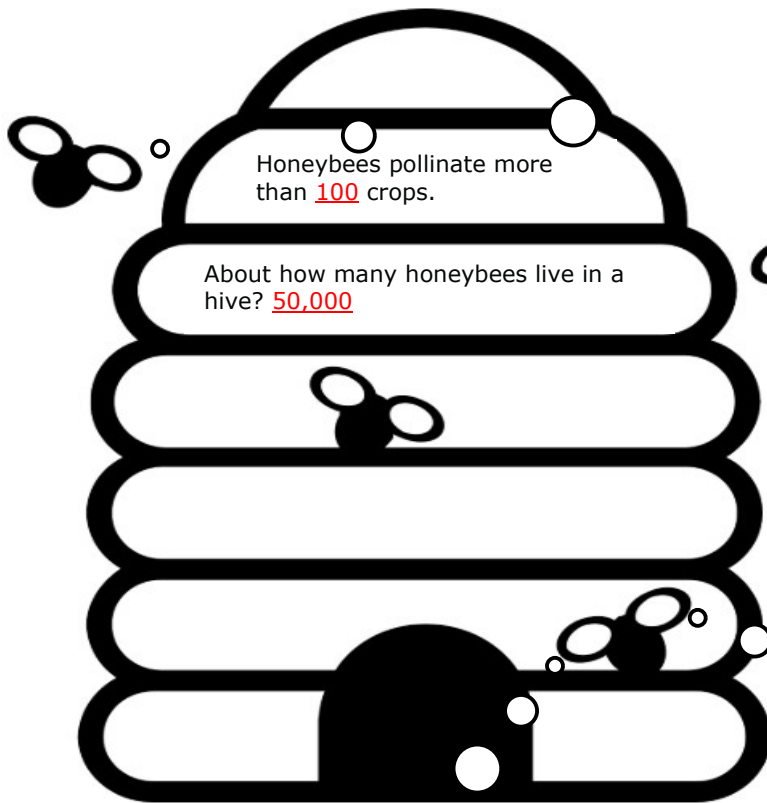
Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-N;
AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.8;
WHST.9.10.4; MP5; MP6; CRP.02; CRP.04; CRP.05; CRP.06; CRP.07; CRP.08;

KEY — Appendix 3: Ag 101: The Buzz About Honeybees

Created: Fall 2020 by the National FFA Organization
Part 1

DIRECTIONS:

Read the article "Ag 101: The Buzz About Honeybees" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.



What are the three different types of honeybees?

1. Queen
2. Female worker bees
3. Male drones

Bees are cited in the article as being "superior pollinators" for what three native crops?

1. Blueberries
2. Cherries
3. Pumpkins

What do bees do to indicate to other bees that they have found nectar and pollen?

They do a waggle dance.

What can you do to protect the honeybees? Answers may include communicating with beekeepers, adding pollinator spaces, not treating feeding spaces with pesticides.

On the map, draw the path that honeybees trucked across the U.S. follow. Use a different color to identify each stop (if it is a region, color all the states in that region). Be sure to label (on the map) each location.



Using AgExplorer, identify two careers that are involved in the beekeeping industry besides a beekeeper. Answers will vary.

1. _____
2. _____

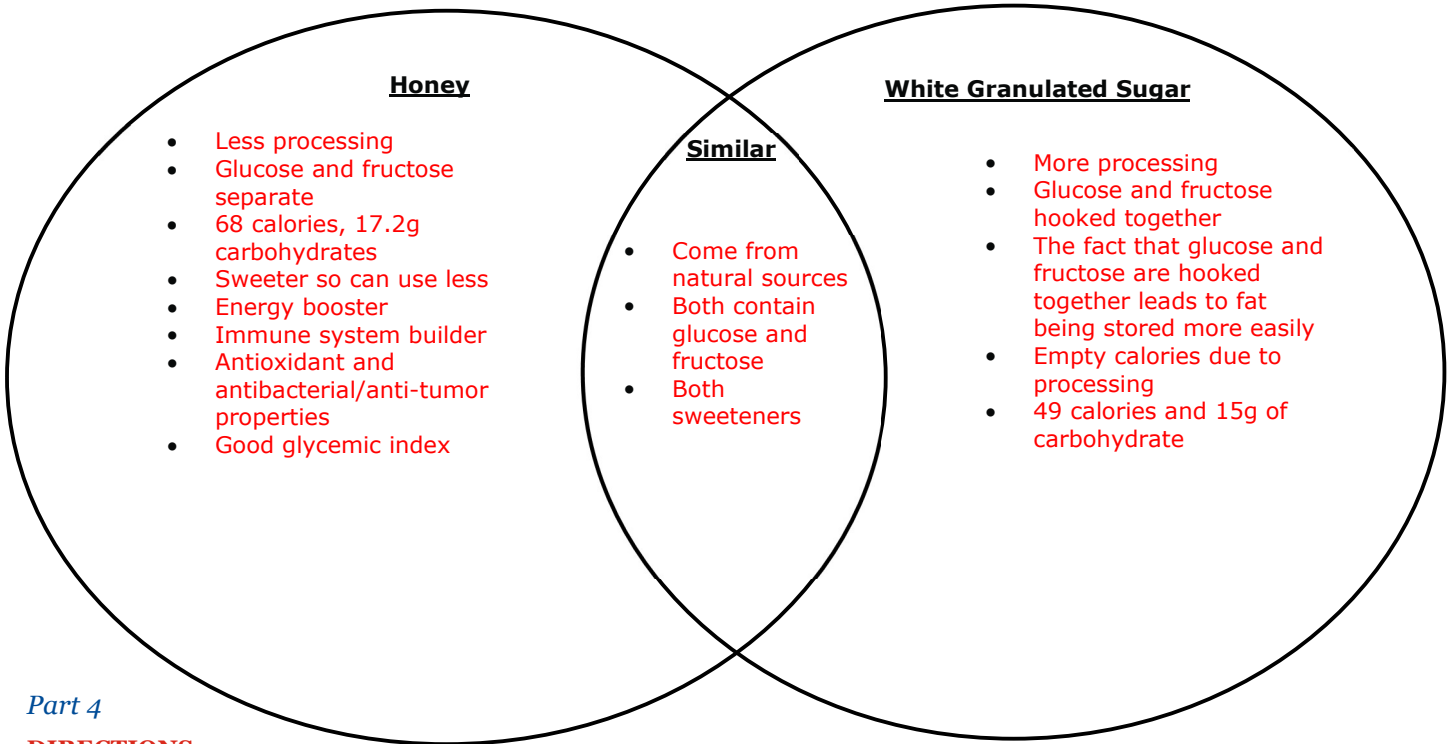


NAME: _____

Part 3

DIRECTIONS:

Not only are bees important for the environment and pollination, but they also produce a food product that delivers many opportunities in the food industry – honey. Read and use the information in the article "[Benefits of Honey](#)" from Michigan State University to better understand the difference between honey and white granulated sugar and why honey has recently made headlines as a great sugar substitute. Complete the Venn diagram below to organize your learning by comparing and contrasting white granulated sugar and honey.



Part 4

DIRECTIONS:

Honey clearly has some great benefits both for our health and for our kitchen. Take one of your favorite recipes and change the recipe to include honey in place of white granulated sugar. Complete the front and back of the following recipe card to share your recipe! **Answers will vary.**

<u>Ingredients</u>	<u>Directions</u>
	

In one sentence, describe the important role that bees and honey play in the agriculture industry. **Answers will vary.**

KEY — Appendix 4: Protecting Pollinators

Created: Fall 2020 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "Protecting Pollinators" in the fall issue of *FFA New Horizons* and complete the following activities.

1. Populations of the iconic pollinator have experienced significant declines over the last 20 years.
2. A group of scientists, conservationists, corporate leaders and farmers are working to increase them through habitat creation and restoration. What is the group known as? Monarch Collaborative
 - a. What groups are part of this collaboration? BASF, Corteva Agriscience and Syngenta
3. In the space below, explain what each of these companies has done for the pollinator initiatives:

Each company has launched its own pollinator initiatives. In 2015, BASF established The Living Acres #MonarchChallenge and has provided 60,000 milkweed stems. Corteva planted pollinator habitat at many of its U.S. locations as part of its national program, Corteva Grows Pollinator Habitat. Syngenta created Operation Pollinator, a global initiative that provides wildflower seed mixtures for pollinators. Each recognized the potential of joining together for an even bigger impact.



4.

Summarize the article in one sentence:

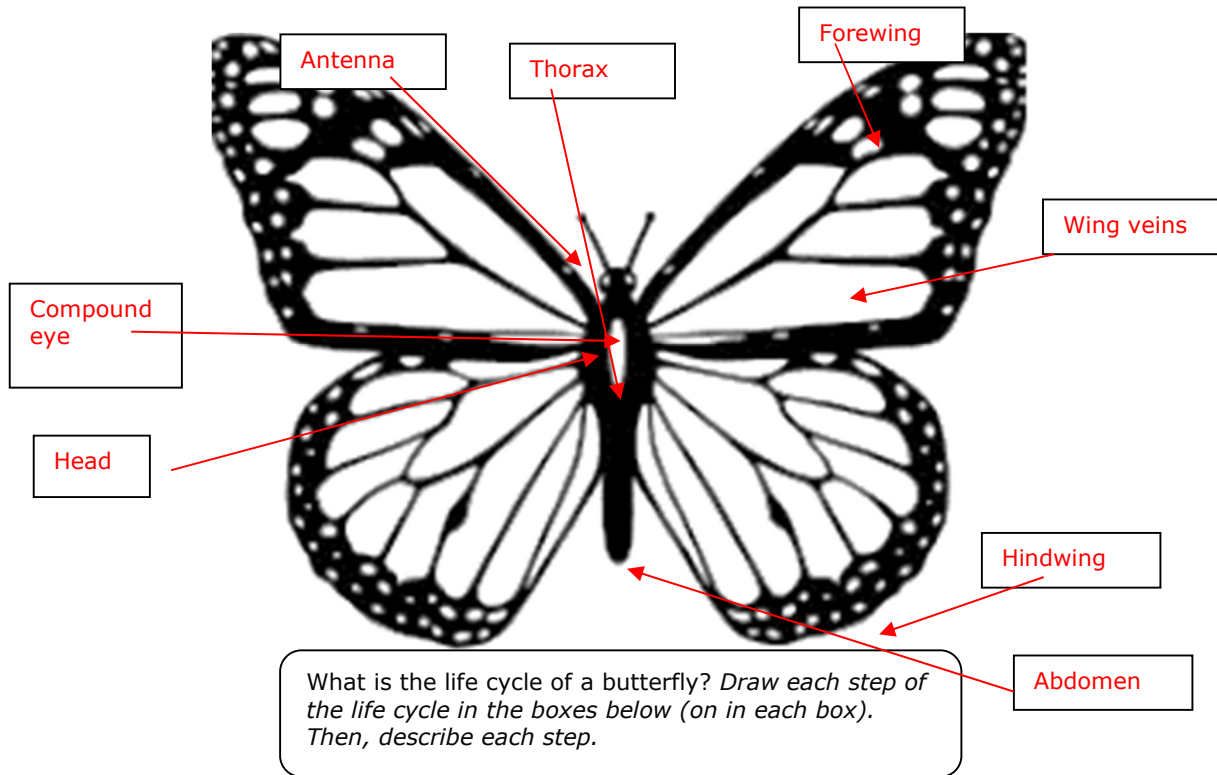
Answers will vary.

DIRECTIONS:

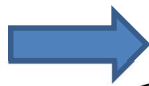
Part 2

Use the following website, or a similar one, to label the different parts of the butterfly:

<https://www.enchantedlearning.com/subjects/butterfly/allabout/>.

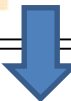


Egg – A butterfly starts its life as an egg, often laid on a leaf.



Larva – The larva (caterpillar) hatches from an egg and eats leaves or flowers almost constantly. The caterpillar molts (loses its old skin) many times as it grows. The caterpillar will increase up to several thousand times in size before pupating.

**Larva
(caterpillar)**



Adult (butterfly) – A beautiful, flying adult emerges. This adult will continue the cycle.



**Adult
(butterfly)**



What type of habitats are most butterfly species found in?
Tropical areas, especially tropical rainforests

Pupa – It turns into a pupa (chrysalis); this is a resting stage.



DIRECTIONS:

Part 3

Use the space below to design a pollinator garden. Use the following websites, or similar ones, to aid in your research and design: <https://www.basf.com/us/en/media/featured-articles/Sustainability/BASF-gets-farmers--golf-courses-on-board-to-revive-monarch-butterfly-population.html>, <https://www.fws.gov/midwest/news/PollinatorGarden.html> and <https://www.gardeners.com/how-to/pollinator-garden-design-for-bees/9144.html>.

Before designing your garden, let's do some research about what you will need. Use this website to help with your research: <https://www.fws.gov/midwest/news/PollinatorGarden.html>.

What is the best location for your garden?

Some butterflies' favorite wildflowers grow best in full or partial sun with some protection from the wind.



What is the best type of plants and why?

Research which varieties of milkweed and wildflowers are native to your area and do well in your soil and sunlight conditions. Native plants are ideal as they require less maintenance and tend to be heartier. You will want to focus on perennials to ensure your plants come back each year and don't require a lot of maintenance.

What do you need to know to prep your garden area?

If you are converting an existing lawn, you will need to remove grass and current plant cover and loosen your soil. You will want to be sure to add nutrient-rich compost or soil to improve the success of your garden.



Use this space to design your pollinator garden.

Here is an example of a pollinator garden: <https://www.gardeners.com/how-to/pollinator-garden-design-for-bees/9144.html>



Research where you can buy the supplies needed for the butterfly pollinator garden. What is one place you can purchase the items from?

Example: <https://www.lowes.com/n/how-to-plant-a-butterfly-garden>

List the supplies (specific flowers) you will need for your garden:

-Variety of plants (wildflowers, milkweed, butterfly bush, daylily, bachelor's buttons, coneflowers, black-eyed Susans, Miscanthus, Verticillata, Gloriosa daisy, etc. Answers will vary.

DIRECTIONS:

Part 4

Use the following website to complete the activities below: FFA.org/value-chain/.

Complete the questions below to learn the impact of a pollinator garden on the Agriculture, Food and Natural Resources (AFNR) Value Chain.



1. What role/impact do pollinators have in each step of the chain? Provide your answer next to each step of the chain identified below.



Research and development companies perform research with pollinators to make sure that their agricultural products are pollinator and environmentally safe.



During this stage, farmers and homeowners prepare the area for the pollinator garden.



fruits and vegetables.

Value Chain



During this stage, because of the pollinator gardens, the fruits and vegetables have higher yield and are

Supply Chain

harvested and prepared for sale/use.



End Product

Once the fruits and vegetables have been harvested and prepared, they are taken to a farmers market, for

example, or are sold to fellow neighbors door-to-door.

What is one fact you learned
about the AFNR Value
Chain?

Answers will vary.



Sales, Service & Support

In this stage, the owners can advertise for the sale of the harvest

products. For example, they can advertise through social media that their products will be available at the local farmers market.

After reviewing and learning
about each step in the value
chain, what is one question that
you still have?

Answers will vary.



Consumers

In this final stage, the consumer purchases the products.

NAME: _____

Aligned to the following standards:

CS.01; FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-J; FFA.CS-N; AG1; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.4; CRP.02; CRP.04; CRP.06; CRP.07; CRP.08

KEY — Appendix 5: How to #SpeakAg With Consumers

Created: Fall 2020 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "How to #SpeakAg With Consumers" in the fall issue of *FFA New Horizons* and complete the activities below.

Where does the article state that consumers get most of their information about agriculture?

1. Personal experiences
2. Media



What are the pros and cons to consumers receiving most of their agricultural knowledge from these two sources?

Answers will vary.

What methods have been deemed most effective in communicating with consumers about food safety and production?

1. Short and informative video clips for social media
2. Shorter articles or fact posts
3. In-person conversations



Advocate

How do you determine which method will be the most effective?

Know your audience and develop a plan

How can you effectively communicate with others about agriculture? Share a story/one you have a personal connection with. Personal experience is the strongest message.



Part 2

DIRECTIONS:

Being able to advocate for agriculture is very important in the fast-paced world that we live in today. But what does advocacy even mean? Work through the following module, FFA.org/AdvocacyExperience/LetsAdvocate/#/, to learn about advocacy. Complete the activities as you go through each step.

Identify one fact and one fiction card that were most surprising to you. Describe why. Answers will vary.

- Fact:
 - Why?
- Fiction:
 - Why?

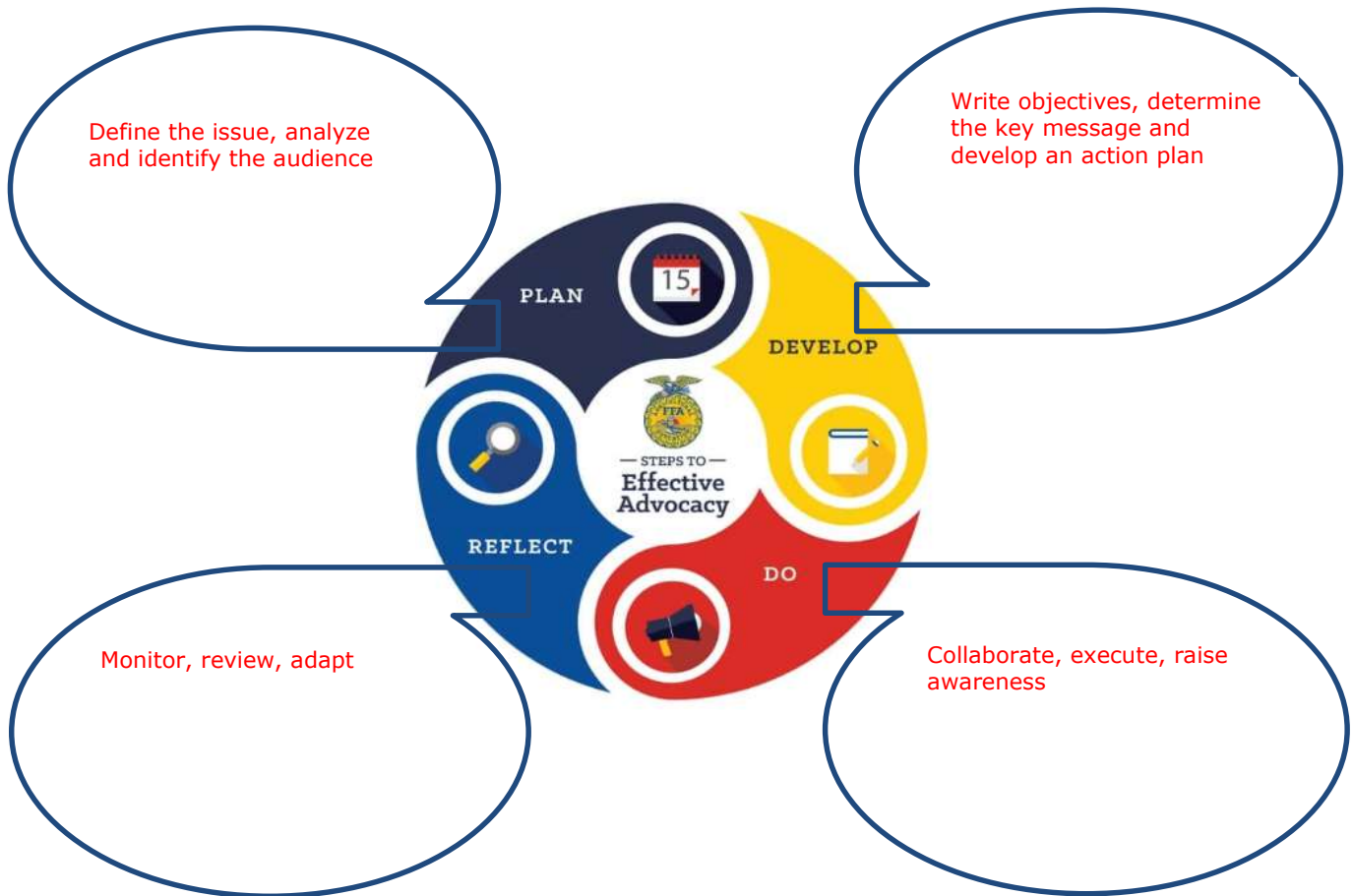
What is an advocate? A person that supports and upholds a cause

What is advocacy? Providing support for a specific cause

What is literacy? Being able to understand information and share knowledge

NAME: _____

In your own words, describe what each step in the "Steps to Effective Advocacy" model means.



After you have successfully passed the quiz, select the "peers" category and complete the following questions.

1. Which issue(s) did you identify that exist in your school?
Answers will vary.
2. What information would be relevant to know to advocate to your peers? List them here.
Answers will vary.

It is important to have goals when you plan to advocate. Identify and describe the best components when developing goals.

S = Specific, clear with relevant details

M = Measurable, you can monitor the progress

A = Attainable, be sure the goal is realistic and achievable, even if challenging

R = Relevant, pertains to your overall mission

T = Timely, ensure you have adequate time to complete the advocacy project

NAME: _____

To practice applying what you just learned about goal setting, develop three SMART goals for yourself. The goals can be for anything in your life. Example: study skills, athletics, FFA, SAE, etc. **Answers will vary.**

1.

2.

3.



In your own words, identify the meaning of each below as it relates to advocating.

- Collaborate: **Be sure to work with the people in your school and community**
- Execute: **Complete the event**
- Raise Awareness: **Promote what you have done and learned**

Part 3

DIRECTIONS:

Now that you understand what advocacy is, it is now your turn! Using what you have learned, develop a 2- to 3-minute speech to advocate for something important to you. Examples: agriculture, why the school should put in a different athletic turf, etc.

The speech must follow the guidelines in the attached rubric. Use the outline to help plan and compose your speech.

1. What are your objectives? Identify three.
2. Introduction
3. Body of the speech to address your three objectives
4. Conclusion

Topic:

Answers will vary.

Objective 1:

Answers will vary.



Why is it important to reflect when you complete an advocacy project? **To be able to improve**



Objective 2:

Answers will vary.

Objective 3:

Answers will vary.

NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-M; FFA.CS-N;
FFA.CS-O; CCSS.RI.9-10.2; CCSS.RI.9-10.4; CCSS.ELA.W.9-10.2;
CCSS.ELA.W.9-10.4; CCSS.SL.9-10.2; CCSS.SL.9-10.4; CRP.02; CRP.04

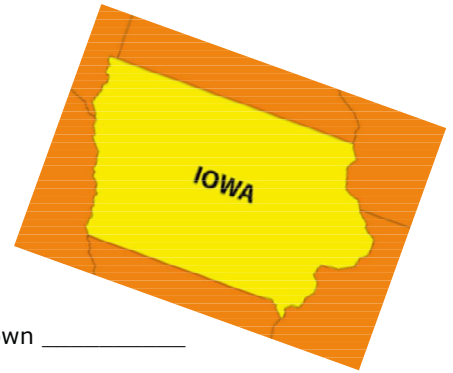
KEY — Appendix 4: Urban Ag Oasis

DIRECTIONS:

Part 1

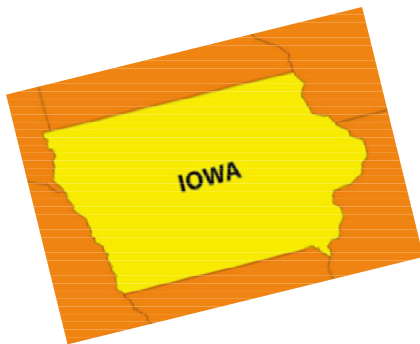
Read the article "Urban Ag Oasis" in the fall 2020 issue of *FFA New Horizons* and complete the following activities.

1. Iowa is a leader in grain production and home to innovators such as John Deere, Corteva Agriscience, Kemin Industries, the World Food Prize, FarmHer and more.
2. While FFA in Iowa has commonly focused on rural communities, the trend today is urban.
3. Within the past year and into the coming year, seven chapters have started or will start, in some of the largest schools in the state including Sioux City and Ames.
4. Iowa FFA Executive Director said in the past decade, FFA membership has grown _____ percent in the state.
 - a. 35 percent
 - b. 25 percent
 - c. 20 percent
 - d. 30 percent**
5. Iowa FFA Executive Director Scott Johnson also said current FFA participation in the state is at _____.
 - a. 15,000
 - b. 17,000
 - c. 16,000**
 - d. None of the above.



6. What is the draw for urban students to take agriculture classes and become FFA members?

The reasons are varied, but in most cases, the opportunity to learn about land and livestock inside the city limits is too interesting and accessible to pass up.



Are there urban FFA chapters/agriculture programs in your state? If so, what cities are those located in? Hint: Use the FFA chapter locator to help with your answer:
[FFA.org/chapter-locator/](https://www.ffa.org/chapter-locator/).
Answers will vary.

NAME: _____

DIRECTIONS:
Part 2

Using the FFA chapter locator, locate FFA chapters in major cities across the United States. (Utilize this website, or one similar, to help with your search of the major cities in the U.S.: <https://www.infoplease.com/us/us-cities/top-50-cities-us-population-and-rank>.) The FFA chapter located can be found at <https://www.ffa.org/chapter-locator/>. (Locate at least 10 FFA chapters in the major U.S. cities.) See below for an example.

Other chapters located in/near major cities:

- Warren Technical FFA; Atlanta, GA
- Minuteman FFA; Lexington, MA (near Boston)
- Miami FFA; Miami, FL
- Roosevelt FFA; Wyandotte, MI (near Detroit)
- H G Parkinson-Fort Cherry FFA; McDonald, PA (near Pittsburgh, PA)
- Jones FFA; Orlando, FL
- Valor Christian International FFA; Beaverton, OR (near Portland, OR)
- Eastway Middle FFA; Charlotte, NC
- Alameda International FFA; Lakewood, CO (near Denver, CO)
- Gateway FFA; St. Louis, MO
- Interlake FFA; Bellevue, WA (near Seattle, WA)
- Northeast FFA; Philadelphia, PA
- Highland Park FFA; Saint Paul, MN (near Minneapolis, MN)
- James Madison-San Antonio FFA; San Antonio, TX
- Woodrow Wilson Middle FFA; Tampa, FL

Los Angeles-Paul Revere Charter Middle FFA; Los Angeles, CA

AAEC-South Mountain FFA; Phoenix, AZ

Canyon Springs FFA-North; Las Vegas, NV

OKC-Capitol Hill FFA; Oklahoma City, OK

Lamar FFA; Houston, TX

Chicago Ag Sciences FFA; Chicago, IL

Friendship Public Charter FFA; Washington, D.C.

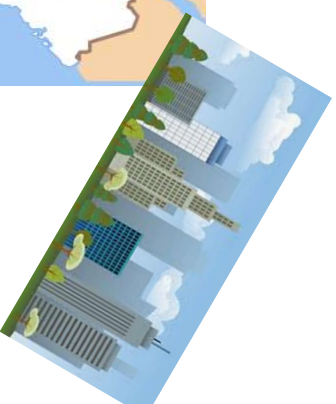
John Bowne FFA; Flushing, NY (near New York)

Glenciff FFA; Nashville, TN

Linden-McKinley FFA; Columbus, OH

Were you surprised by some of the cities that have FFA chapters? Why or why not?
Answers will vary.

What is the nearest major city closest to your town?
Answer will vary.



NAME: _____

DIRECTIONS:

Part 3

Complete the graphic organizer below to compare the activities that Des Moines FFA Chapter does with your chapter (or school club/sports team).

Outside the circle, write things that your FFA chapter and agriculture program (or club/sports team) do that are different. (Write these in any blank space outside the circle. Write at least five things.)



What are things that the Des Moines FFA Chapter does?
Write at least five things.

- 1) The Des Moines chapter participates in science fair projects where members research cognitive abilities in bonobos (the renowned Ape Cognition and Conservation Initiative is located nearby and studies bonobos), tracking consumer greenhouse trends, making a wind turbine to check energy output and analyzing egg nutritional values.
- 2) The members also took part in a winter 2020 competition where members explored the complexities of the cattle industry through role playing such as a grower, environmentalist, etc.
- 3) They also did meetups with state legislators and the governor where they discussed current issues and developed communication skills.
- 4) They competed in horse judging competitions.
- 5) They hold monthly meetings, where they talk about activities, competitions, etc.
- 6) Members promoted pork grown by area youth by handing out samples, cookbooks, etc. from the Iowa Pork Producers at a local grocery.
- 7) Members have packaged dry food for Meals from the Heartland and made fleece blankets for the city's Ronald McDonald House.
- 8) Members also raise livestock and have the opportunity for community outreach with their animals.

What are things that you do that are the same or similar?
Answers will vary.

What is something you learned from this article that you can use in your FFA chapter (or school club or sports team)?
Answers will vary.

Summarize the article in one sentence: *Answers will vary.*

NAME: _____

Aligned to the following standards:

FFA.PL-A; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J; FFA.CS-M;
FFA.CS-N; FFA.CS.O; CCSS.ELA.W.9-10.2; CCSS.ELA.W.9-10.4;
CCSS.RI.9-10.2; CCSS.RI.9-10.4; CCSS.SL.9-10.2; CCSS.SL.9-10.4; CRP.02; CRP.04; CS.05; AG5

KEY — Appendix 7: Bulrush in the Bayou

Created: Fall 2020 by the National FFA Organization

DIRECTIONS

Part 1

Read the "Bulrush in the Bayou" article in the Fall 2020 issue of *FFA New Horizons* answer the following questions.

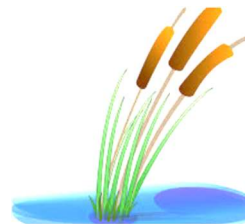
1. The Springfield FFA Chapter is helping to restore Louisiana wetlands.
2. What is the goal of the students when they step into the swamps?

Their goal is to plant thousands of native grasses to restore habitat, combat erosion and protect coastal communities from the effects of wind and water.

What supplies do the students take with them to the swamp?
Rubber boots and burlap bags filled with CA bulrush reeds

3. Where did the chapter receive their grant from? How much was the grant for?
They received a grant from the Natural Resources Conservation Service to start the project in 2016. The grant was for \$1,200.
4. What did the students do with the funds received from the grant?

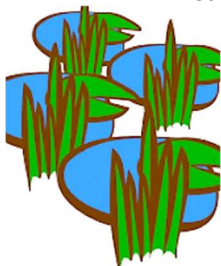
With the grant, students established California bulrush, a native perennial that thrives in wetland marshes, in their school greenhouse and planted the mature grasses in local wetlands.



Who did the chapter partner with?
They partner with local community groups to coordinate annual restoration projects. It started out as a partnership with Louisiana State University.

5. During the 2019 field day, the Springfield chapter planted _____ California bulrush weeds?

e. 5,000
f. 7,000
g. 12,000
h. 10,000



6. How did COVID-19 affect the 2020 plans, and what do they plan to do to overcome it?
The COVID-19 pandemic forced the chapter to cancel its 2020 restoration project. The members plan to be back in the swamps next summer to establish more native grasses and restore wetland habitats.

NAME: _____

Part 2

Go to AgExplorer, AgExplorer.com, to learn about careers related to wetlands. Research **five** careers that are associated with wetlands and/or environmental service systems and complete the information below about each of the careers. **Example answers are below but are not limited to the careers provided.**

Career: Ecologist

Recommended High School Courses:

Agricultural education, biology, chemistry, environmental science, mathematics and computer science

Education/Training Required:

Bachelor's degree in biological sciences, botany or ecology

Career: Environmental Engineer

Recommended High School Courses:

Agricultural education, a focus on science, earth science, biology, botany, chemistry and biology and mathematics

Education/Training Required:

A bachelor's degree in agricultural, civil, environmental or chemical engineering is required.

Career: Environmental Compliance Officer

Recommended High School Courses:

Agricultural education, a focus on science, earth science, biology, botany, chemistry and biology and mathematics

Education/Training Required:

A bachelor's degree in engineering, soil science, biology, environmental or physical science is required. Depending on the scope of work, some positions may require a master's degree.

Career: Environmental Scientist and Specialist

Recommended High School Courses:

Agricultural education, a focus on science, earth science, biology, botany, chemistry and biology and mathematics

Education/Training Required:

A bachelor's degree in biology or a related field, such as horticulture, chemistry or environmental science. Positions that are research based may require a master's or doctorate degree.

Does one of these careers interest you?
Answers will vary.

Explain your answer. If none interest you, what career field does interest you and why?
Answers will vary.

Career: Environmental Science and Protection Technician

Recommended High School Courses:

Agricultural education, a focus on science, earth science, biology, botany, chemistry and biology and mathematics.

Education/Training Required:

An associate degree in natural resources, soil science, biology or a related science field
Those with a bachelor's degree in similar fields would increase their chances for employment and advancement once on the job.

NAME: _____

Part 3

Go to this website or one similar,

<https://www.nps.gov/subjects/wetlands/why.htm#:~:text=Wetlands%20are%20highly%20productive%20and,provide%20wildlife%20habitat>, and answer the questions below to learn more about wetlands.

1. Overall, why are wetlands important?

Wetlands are highly productive and biologically diverse systems that enhance water quality, control erosion, maintain stream flows, sequester carbon, and provide a home to at least one third of all threatened and endangered species.

2. What are seven specific reasons why wetlands are important?

Improve water
quality

Provide wildlife
habitat

Maintain ecosystem
productivity

Reduce coastal
storm damage

Provide recreational
opportunities

Improve the water
supply

Provide
opportunities for
education



3. Describe the wildlife habitat wetlands provide:

Wetlands provide habitat for many species of amphibians, reptiles, birds and mammals that are uniquely adapted to aquatic environments. Deer, elk and bears commonly use wetlands for food and shelter. Wetlands are vital to many migratory bird species.

4. Explain the habitat for threatened and endangered species.

About one-third of all plants and animals listed as threatened or endangered species in the United States depend on wetlands for survival, including whooping cranes, American crocodiles, the dwarf lake iris and several orchid species.

Do you know of a
wetland in your state or
area?
Answers will vary.

If so, where is it located?
Answers will vary.

Use these sites to help with your answer:
<https://www.neefusa.org/nature/land/wetlands-united-states> and
<https://www.fws.gov/wetlands/data/Mapper.html>. (Click on wetlands mapper at the bottom of the page, check the wetlands box to the left and click the legend.)

NAME: _____

Part 4

Design your own wetland (for your backyard or an area in your town). Take what you have learned thus far and design your own wetland. Utilize the following website, or one similar, to design your wetland: <https://www.nwf.org/Magazines/National-Wildlife/1997/How-to-Create-a-Mini-Wetland>.

Read the article, on the above website, and apply the steps/guidelines to design your own wetland. Use the space below to sketch out your plan.

See these websites for examples of wetlands:

<https://www.buildwithrise.com/stories/sustainable-landscaping-with-a-mini-wetland>

<https://ferncreekdesign.org/wetlandsgarden.html>

What plants did you chose to include in your wetland and why?

Ferns, marsh marigold, forget-me-nots, cardinal flowers, great lobelia, yellow coneflower, bee balm, swamp milkweed, Joe-Pye-weed, lance-leaved goldenrod and New England aster. Some trees and shrubs such as birch, red-osier dogwood, sweet gum, etc.

Ferns add grace and beauty and provide hiding places for small creatures.

Marsh marigold, forget-me-nots, cardinal flowers, great lobelia, yellow coneflower, bee balm, swamp milkweed, Joe-Pye-weed, lance-leaved goldenrod and New England aster can provide nectar, pollen and seeds for insects and birds, beautiful blooms.

Some trees and shrubs such as birch, red-osier dogwood, sweet gum, etc. provide not only food and shelter but add texture and color to the landscape during the bleaker months.

How can you take what you have learned about wetlands and use it in your life (future career, home, etc.)?

Answers will vary.