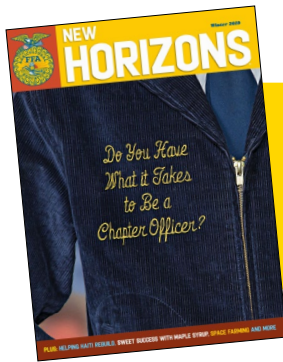




NEW HORIZONS

WINTER 2019 TEACHING GUIDE



IN THIS GUIDE, YOU WILL FIND ACTIVITIES FOR SIX ARTICLES IN THE WINTER 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.)

SCHOLARS SAY...

A compiled list of discipline-specific or academic vocabulary found throughout this issue of FFA New Horizons:

Sap	Extemporaneous
Sugarhouse	Entrepreneurship
Spile	Intentional
Astronaut	Forecasting
Burgeoning	Imaging
Meteor shower	Aerospace
Lunar eclipse	Enamored
NASA	Yield
Solar eclipse	Transparency
Valedictorian	Bias
Demonstrate	
Desire	
Grit	
Extraordinary	
Ewes	

VOCABULARY ACTIVITY

Two Truths and a Lie

Students should focus on ten words from the vocabulary list and write down three facts about the word but one fact should be false. Encourage students to think about the word's part of speech, definition, related words, etc. Once students have completed this for all ten words, collect the statements and divide students into small groups. Have groups discuss the words and statements and try to identify the lie.

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



Sweet Success:

Who doesn't enjoy maple syrup on their pancakes on Saturday morning? But where does syrup come from? In this article, read about FFA chapters that produce maple syrup and the process they go through each year.

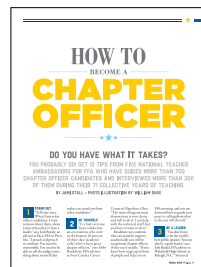
[Appendix 1 – Sweet Success](#)



Space Farmer:

Ever wonder what agriculture and space have in common? This article discusses how a former FFA member found his way to NASA and the connection FFA, agriculture and space have in his life.

[Appendix 2 – Space Farmer](#)



How to Become a Chapter Officer:

Check out this quick read to learn some great tips from agriculture teachers and FFA advisors about applying and interviewing for a chapter officer position.

[Appendix 3 – How to Become a Chapter Officer](#)



On the Record: Scott Stump:

Read this Q and A about Scott Stump, Assistant Secretary for Career, Technical and Adult Education at the U.S. Department of Education, to learn how his background in FFA helps him in his career.

[Appendix 4 – On the Record](#)



Charting Her Path:

How can agriculture help you gain a career, even if it's not in the agriculture industry? Read this exciting story about how one former member used her FFA experience to end up in satellite imagery.

[Appendix 5 – Charting Her Path](#)



Global Impact:

When you have a connection with a school in another country, you learn about that school and find ways to work with and learn from the students. One U.S. school found their sister school in Congo and were determined to help make a difference.

[Appendix 6 – Making an Impact](#)



NEW HORIZONS

WINTER 2019 TEACHING GUIDE



ARTICLE SUMMARY

Sweet Success

Who doesn't enjoy maple syrup on their pancakes on Saturday morning? But where does syrup come from? In this article, read about FFA chapters that produce maple syrup and the process they go through each year.

BELL RINGER:

How is maple syrup produced?

DISCUSSION QUESTIONS

1. What trees are used for syrup production?
2. How does syrup make it to our table?
3. What careers are associated with syrup production?
4. What states produce the most syrup?

ACTIVITY

Have students complete the bell ringer. Then using what students came up with, have a conversation to create a list of the different steps in maple syrup production.

Part 1: Students should read the article "Sweet Success" in the winter issue of FFA New Horizons. While reading, students should complete the questions in the "Sweet Success" worksheet (Appendix 1).

Part 2: In this part of the lesson, students will explore the role of syrup production. Students will analyze the table that depicts the amount for syrup produced in 2018 by state (USDA). Students will underline, in green, the top five producing states and circle the total amount of U.S. produced syrup. Students will locate, label and color the top five producing states on the U.S. map and create a bar graph that depicts the amount of syrup produced by each of the five states. Next, students will use AgExplorer to research careers and the education associated with syrup production.

Part 3: Next, students will explore the different types of trees that are used for syrup production by analyzing the picture of three sap producing trees to identify characteristics of each tree. Students will go outside (if cold, find a picture) and find a tree common to their area. They will draw or paste a picture in the space provided and compare and contrast characteristics of the trees.

Part 4: Finally, students will use the Tractor Supply Company website to identify the tools and costs associated with producing syrup. They will use the "Sweet Success" article again to identify the steps in the process, as well as the safety equipment and personal protective equipment (PPE) needed. To review, students will write a summary of the entire syrup production process while using 10 key words and terms.

FFA TIP

Students can participate in the forestry career development event (CDE) to continue fine tuning their tree identification skills.

SAE TIP

Ask students to describe as many different start-to-finish maple syrup-based supervised agricultural experience (SAE) programs as they can. Hint: There are at least five. Describe as many different supervised agricultural experiences (SAEs) that you could have in the syrup production industry

Natural Resources Systems SAE Idea Cards: <https://ffa.box.com/s/2mhqkhhzqnpr1ygdietor5w8nubjn90e>

VOCABULARY

Vocabulary:

Sap
Sugarhouse
Spile

EXIT TICKET

What is the process utilized for syrup production?

CAREER FOCUS AREA

Agribusiness Systems
Food Products and Processing Systems
Plant Systems

REFERENCES

AgExplorer: <https://AgExplorer.FFA.org>

Penn State Extension: <https://extension.psu.edu/maple-syrup-production-for-the-beginner>

Tractor Supply Company: https://www.tractorsupply.com/out-here/articles/cooking_make-maple-syrup

APPENDICES

Appendix 1 - Sweet Success

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.02, CS.05 • FFA PRECEPTS: FFA.PL-A, FFA.PG-I, FFA.PG-J, FFA.CS-N • COMMON CAREER TECHNICAL CORE: AG-PL2, AG2, AG5 • COMMON CORE - READING: INFORMATIONAL TEXT: CCSS.ELA.RI.9-10.2, CCSS.ELA.RI.9-10.4 • COMMON CORE - MATH PRACTICES: MP1, MP5, MP6 • AFNR CAREER READY PRACTICES: CRP02, CRP04, CRP06, CRP08 • P21 SKILLS: COMMUNICATION, FLEXIBILITY AND ADAPTABILITY, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY





SWEET SUCCESS

FFA CHAPTERS PRODUCE MAPLE SYRUP TO HONOR LOCAL AGRICULTURAL TRADITIONS.

Even though fourth-generation sugarmaker Henry Sarafin had been helping boil sap into syrup on his family farm in Chesterfield, Mass., he still looked forward to taking a sugaring class at Smith Vocational and Agricultural High School.

"I wanted to help teach other FFA members about sugaring and get them to feel as excited about it as I do," he says.

The sugaring class at the school includes lessons on forest management, syrup production, sales and marketing. Students are responsible for all aspects of the process, from tapping trees and collecting sap to boiling it into syrup and selling the finished product. It also engages students in an age-old agricultural tradition.

American sugarmakers collected sap from 13.3 million taps and produced more than 4.24 million gallons of maple syrup last year, according to the United States Department of Agriculture. Several FFA chapters in the Northeast have established their

own forest of sugar maple trees, known as a sugarbush, to learn about the rewards and challenges of making their own maple syrup.

Jim Anspach, agricultural education instructor and FFA advisor at Smith Vocational and Agricultural High School, believes sugaring classes and hands-on work in the sugarhouse expose students to math, science, business, history and environmental studies while keeping a New England tradition alive.

"Sugaring is a good transition from the classroom," he says. "It gets students outside to do something cool and helps them understand the hard work that goes into making maple syrup."

STICKY SITUATIONS

In Whitefield, N.H., the sap runs for less than six weeks, and Paradise FFA members at White Mountains Regional High School work at a frenzied pace to collect sap from 300 trees and boil it down in their on-site sugarhouse, a small cabin where the

BY JODI HELMER

PASS THE SYRUP

Here are just a few of the FFA chapters that operate sugarhouses to teach students about the intricacies of forest management, tapping trees, collecting sap, along with producing and marketing maple syrup.

The **WOODBURY FFA CHAPTER AT NONNEWAUG HIGH SCHOOL IN WOODBURY, CONN.**, started tapping trees in 1989. Agriculture teacher and FFA advisor

George Lyman works alongside students to produce 25 gallons of maple syrup each season. In addition to making maple syrup, students learn about the science, math, forest management and Native American history that are essential elements of the iconic agricultural product.

The sugaring operation at **VERNON VERONA SHERILL HIGH SCHOOL IN VERONA, N.Y.**, has

grown tremendously since its inception, according to Sara Ouellette, agriculture teacher and FFA advisor. Last season, students tapped 750 trees in the school sugarbush and sourced sap from FFA alumni to produce 2,000 gallons of maple syrup – a school record. The syrup is sold retail by FFA members to a large base of community members and is sold wholesale to local stores and restaurants.

Several FFA members at **NORTHWESTERN REGIONAL SCHOOL IN WINSTED, CONN.**, have started SAEs or small businesses after learning the art of sugaring. Erick Wildes, agriculture teacher and FFA advisor, oversees production. Students collect sap from 75 taps on school grounds and tap additional trees throughout the community, including nonprofits and land owned by FFA alumni. In addition to syrup, the chapter makes confections such as maple candy.



a lot about how finicky the season can be and how many hands it takes to get maple syrup from tap to table. They also get to see how much community support there is for agriculture.”

PROUD OF THE PRODUCT

Peterson admits that fellow FFA chapter members teased him for carrying around a pint of syrup and spoons at the National FFA Convention & Expo and encouraging FFA members from other schools

to try a sample. The former state officer took the good-natured ribbing in stride because he is proud of the work Paradise FFA members did to produce their own maple syrup.

“I spent so many hours after school tending to a fire just to make three extra gallons of syrup,” he recalls. “I wanted to show off our hard work and introduce FFA members to the concept of real maple syrup.”

Local communities get excited about the operations, too. The Wamogo FFA in Litchfield, Conn., taps 100 trees on campus and boils it in an oil-fired evaporator. A local sugarmaker helps out with technical issues and problem-solving during the process.

The finished syrup is sold in the on-campus ag store, where parents, staff and neighbors stock up on the sweet confection, and the revenue from syrup sales supports FFA events and scholarships.

Following the journey from production to consumption helps students learn the realities of agricultural production, according to assistant principal and FFA advisor Charles Rowland.

“The entire production is student-driven; the teachers keep things running in the right direction, but students do all the work,” Rowland says. “They see how much work goes into producing a single gallon of syrup.”

Top right: Former Paradise FFA Chapter president Dustin Peterson checks the syrup’s density. Members here collect sap from 300 trees and boil it down in their on-site sugarhouse. Below: Wamogo FFA members work in the sugarbush. The chapter taps 100 trees on campus.

maple sap is boiled. FFA Alumni Dustin Peterson, 20, and Cloe Bean, 18, often worked late into the evenings to keep the evaporator running.

“The season is short and intense,” says agriculture teacher and FFA advisor Jenn Scarinza. “You are trying to seize a very fleeting opportunity when Mother Nature dictates, and you have to work together to get it done.”

At Smith Vocational and Agricultural High School, even alumni pitch in during sugaring season.

Students collect sap in buckets, hanging from up to 40 sugar maple trees on campus, but the school lacks its own sugarhouse to process the sap into syrup. Students boil some of the sap over an open fire, which ensures that FFA members get hands-on

experience. Most of the sap is transported to a local sugarhouse, where an FFA Alumni member boils it down and bottles it for the chapter. The chapter collects 350 gallons of sap and produces an estimated nine gallons of syrup.

“Most of the students in our program do not come from ag backgrounds,” Anspach says. “They learn





Some students take their devotion to maple syrup to the next level. Peterson created a business plan for a maple syrup operation for his capstone project and hopes to put it into practice when he starts his own sugaring operation in the future.

Sarafin also pursued sugaring for his supervised agricultural experience. He started with 25 taps on his family farm and grew his operation to 100 taps while learning about working more efficiently and running a streamlined operation. He joined the family farm when he graduated from Smith Vocational and Agricultural High School in 2018,

and he continues applying the lessons he learned in the classroom (and out in the sugarbush) in his operation.

Back at Paradise FFA, Bean led tours for school groups, which she believes got students excited about coming to high school. The sugaring operation also gave FFA members a taste of possible career options after graduation.

"Maple syrup is a booming industry around here," Scarinza says. "New taps are going in all the time and [sugarmakers] need good help. It's a fun class, but there is also a potential future in it." •

Clockwise from top left: Smith Vocational and Agricultural High School FFA member Connor Pfalzgraf in the sugarbush. Cloe Bean taps a tree. Wamogo FFA members in the sugarbush. Former national officer Valerie Earley makes treats with Paradise FFA members.

MAKING MAPLE SYRUP

CURIOS ABOUT THE MAPLE SYRUP-MAKING PROCESS? HERE'S THE GENERAL PROCESS.

1. Insert taps into sugar maple trees. Sap runs when temperatures dip below freezing at night and rise above freezing during the day.
2. Collect sap. Sap can drip from taps into buckets or run via a series of vacuum tubes that lead to a holding tank.
3. Boil sap. Sap is boiled down in an evaporator. It takes about 40 gallons of sap to make one gallon of maple syrup.
4. Filter the syrup.
5. Bottle the syrup.
6. Pour over pancakes and enjoy!

NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Appendix 1: Sweet Success

Created: Winter 2019 by the National FFA Organization
Part 1

DIRECTIONS:

Read the "Sweet Success" article in the Winter 2019 issue of *FFA New Horizons* and complete the following activities.

Where is Henry's family farm located?

- a. Worcester, MA
- b. Chesterfield, MA
- c. Framingham, MA
- d. Paradise, MA



How many trees does the Wamogo FFA Chapter tap for sap on campus?

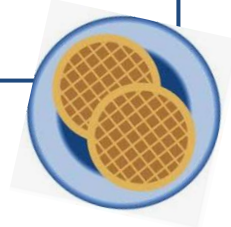
- a. 20
- b. 60
- c. 80
- d. 100

Which of the following is not listed as part of Henry's coursework?

- a. Sales and marketing
- b. Syrup production
- c. Fermentation science
- d. Forest management



According to the United States Department of Agriculture, American _____ collected sap from _____ million taps and produced more than _____ million gallons of maple syrup last year.



What is one of the biggest challenges Paradise FFA faces in its syrup production?



Why is syrup primarily produced in the Northeastern United States??

NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Part 2

DIRECTIONS:

Maple syrup production plays a large role within the economy. Using the information below, explore the production process for syrup in the United States.

The following table from the USDA depicts the state syrup production in the U.S. Use this table to complete the following:

- (1) In green, underline the top five syrup-producing states in 2018.
- (2) In red, circle the total amount of syrup produced by the United States in 2018.
- (3) On the map below, locate, label and color the top five syrup-producing states in 2018.
- (4) Using the outline below, create a bar graph that depicts the amount of maple syrup produced by the top five producing states. Include labels and a title.

Maple Syrup Taps, Yield, and Production – States and United States: 2016-2018

State	Number of taps			Yield per tap			Production		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
	(1,000 taps)	(1,000 taps)	(1,000 taps)	(gallons)	(gallons)	(gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)
Connecticut	85	86	73	0.224	0.233	0.247	19	20	18
Indiana	60	62	70	0.200	0.194	0.257	12	12	18
Maine	1,860	1,890	1,870	0.363	0.375	0.288	675	709	539
Massachusetts	315	320	320	0.244	0.263	0.225	77	84	72
Michigan	400	440	455	0.225	0.250	0.275	90	110	125
Minnesota	76	77	65	0.184	0.182	0.200	14	14	13
New Hampshire	545	550	560	0.310	0.280	0.291	169	154	163
New York	2,515	2,650	2,730	0.281	0.287	0.295	707	760	806
Ohio	370	400	400	0.189	0.200	0.225	70	80	90
Pennsylvania	660	660	670	0.217	0.211	0.212	143	139	142
Vermont	4,850	5,410	5,670	0.410	0.366	0.342	1,990	1,980	1,940
West Virginia	51	61	66	0.118	0.148	0.121	6	9	8
Wisconsin	765	735	750	0.307	0.272	0.300	235	200	225
United States	12,552	13,341	13,699	0.335	0.320	0.304	4,207	4,271	4,159

(3)



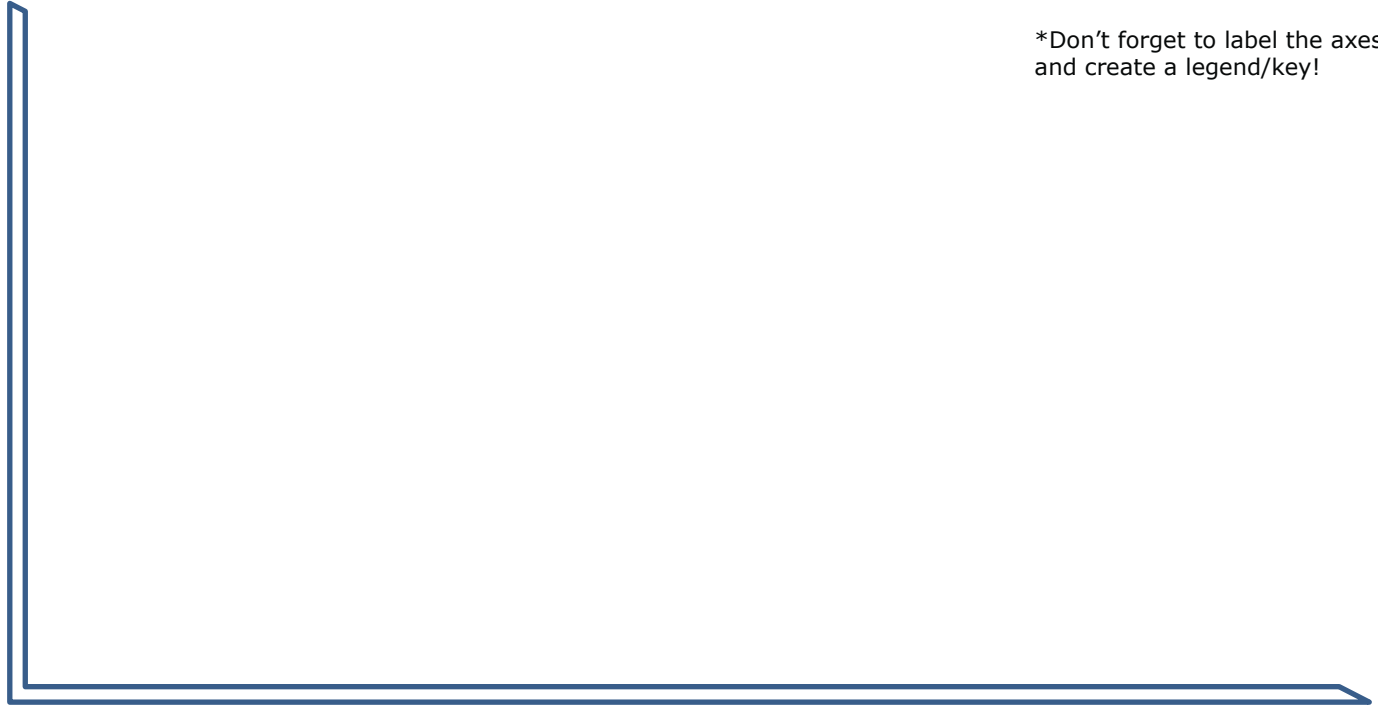
NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

(4)

Table Title: _____

*Don't forget to label the axes and create a legend/key!



What surprises you about syrup production in the United States?

Using [AgExplorer](#), identify three careers you could have within the maple syrup production industry and the education required to acquire that career.

1. _____
a. Education: _____

2. _____
b. Education: _____

3. _____
a. Education: _____

What do you predict will be the future of maple syrup production?



NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Part 3

You cannot collect sap for syrup from just any tree. You must select the correct tree. Here are three different types of trees that can be used for sap collection. In this box, identify the similarities and differences between the three trees. Consider the leaves, buds and tree bark.

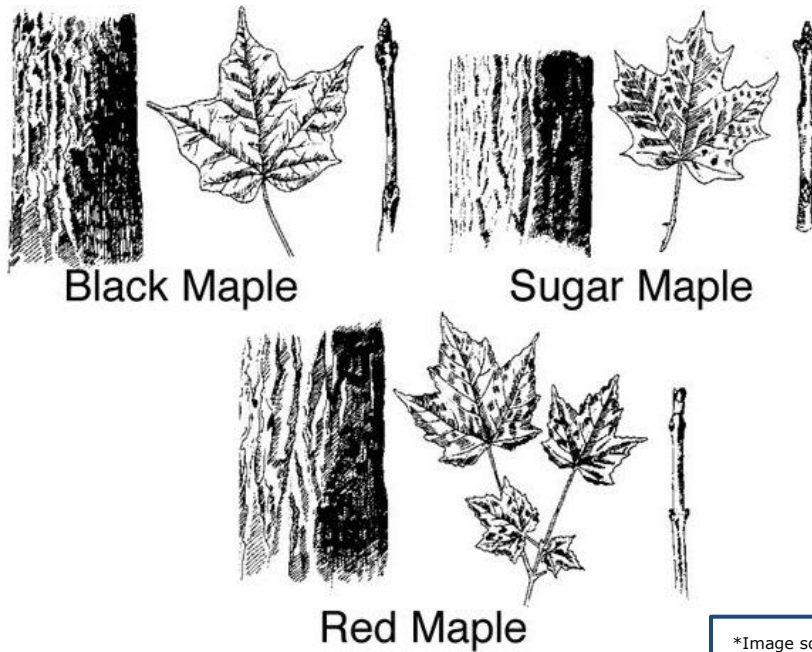


*Image sourced from [Penn State Extension](#).

Go outside and select a tree that grows in your area. Take a picture or draw a picture of the leaves (if it's not winter), buds and bark and place it here. What are the differences and similarities between the tree that grows near you and the three above used for sap?

What impact would a plant disease moving through the trees used for syrup production have on the industry?



NAME: _____

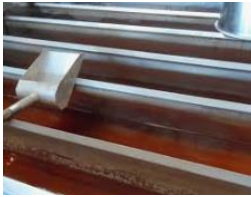
Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Part 4

Maple syrup production is an important commodity in the United States. Surprisingly, few tools are needed in order to produce syrup at home. Using the [Tractor Supply Company](http://www.tractorsupplycompany.com) website, create a list of supplies you would need if you wanted to make syrup. Research the cost for each needed supply to determine your startup cost.

1. _____ \$ _____
2. _____ \$ _____
3. _____ \$ _____
4. _____ \$ _____
5. _____ \$ _____
6. _____ \$ _____



What are the steps in the syrup production process? List each step and draw a picture to depict the step. HINT: Use the side column in your *FFA New Horizons* article to find the steps with a description.

1. _____

2. _____

3. _____

4. _____

6. _____

5. _____

What safety equipment or personal protective equipment (PPE) should be utilized during the syrup production process?

NAME: _____

DIRECTIONS:

Compose a detailed summary of the syrup production industry using 10 key words and terminology that you have learned through this lesson. Underline each of the terms in your summary.

[illegible]



NEW HORIZONS

WINTER 2019 TEACHING GUIDE



ARTICLE SUMMARY

Space Farmer

Ever wonder what agriculture and space have in common? This article discusses how a former FFA member found his way to NASA and the connection FFA, agriculture and space have in his life.

BELL RINGER:

What role does agriculture play in space travel?

DISCUSSION QUESTIONS

1. How are new foods developed for the space program?
2. What role does agriculture play in the space program?

ACTIVITY

Part 1: Begin by having students answer the bell ringer question. Discuss the role agriculture plays in space travel and create a list of responses on the board. Next, have students read the article "Futuristic Farming" in the winter issue of FFA New Horizons and answer the associated questions on the worksheet "Space Farmer" (Appendix 2). Once finished, continue the discussion of agriculture's role in space.

Part 2: Students have now learned how Grant used the skills learned in FFA to land in a career area that is truly out of this world! Now, students will learn about the food science side of how astronauts eat during their space missions. Have students watch "Tasting Astronaut Food: Inside NASA's Space Food Systems Laboratory," <https://youtu.be/6vVle67Tfjc?t=245> (end at 9:55), and answer the associated questions. If the video is unavailable, read the article "Food for Space Flight" from NASA, https://www.nasa.gov/audience/forstudents/postsecondary/features/F_Food_for_Space_Flight.html.

Discuss how students would feel consuming these food products for all their meals.

Part 3: Now that students have a basic understanding of the food science that goes into the feeding of astronauts, have them look at what it may look like for their favorite meal. Students will select dinner or lunch and identify the main course, beverage, side(s) and dessert. They will then draw a picture of the item as it would appear packaged for space. Students will also identify how the food may have been prepared prior to packaging to be easily consumed by those in space (Ex. dehydrated). Students will learn that it costs about \$10,000 per pound of payload for space. Students are going to select their favorite snack, determine the weight and calculate the cost of sending that snack into space to gain an understanding of the cost associated with feeding astronauts.

FFA TIP

Students can compete in the food science and technology career development event (CDE) to enhance food science skills that are critical to new food innovations.

SAE TIP

Assign students to investigate how space exploration and research have impacted agriculture and/or the agricultural technology being developed to further space travel and colonization.

VOCABULARY

Astronaut
Burgeoning
Meteor shower
Lunar eclipse
NASA
Solar eclipse

EXIT TICKET

What role does agriculture play in space travel?

CAREER FOCUS AREAS

Food Products and Processing Systems

RELATABLE WEBSITES

NASA: <https://www.nasa.gov>

APPENDICES

Appendix 2: Space Farmer

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.02, CS.05 • FFA PRECEPTS: FFA.PL-A, FFA.PL-C, FFA.PG-J, FFA.CS-N • COMMON CAREER TECHNICAL CORE: AG2, AG5 • 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 – MATH PRACTICES: MP4, MP5, MP6 • AFNR CAREER READY PRACTICES: CRP.02, CRP.04, CRP.06, CRP.08 • P21 SKILLS: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

FUTURISTIC FARMING

THIS MEMBER IS PURSUING AN AGRICULTURE CAREER THAT IS OUT OF THIS WORLD.

Growing up, Grant Lach spent a lot of time outside viewing meteor showers, comets and lunar and solar eclipses. The out-of-this-world experiences fueled his passion for space and led Lach, 19, to major in astronomy and astrophysics at Ohio State University.

Lach, who was a member of the Bloom Carroll FFA in Carroll, Ohio, ran for the state officer team. Earning a spot changed his career plans. The college sophomore recognized there were opportunities to pursue both agriculture and outer space with a career as a space farmer.



"NASA is investing \$1.6 billion in the Artemis Project to take people to the moon by 2024," he says. "Agriculture is the corner of civilization, and if we're intending to continue to colonize places beyond Earth, it's

important to figure out how to provide sustainable nutrition with limited resources on other planets."

Lach secured a coveted role on the social media team helping NASA promote its SpaceX Falcon 9 rocket launch at Cape Canaveral. He hopes to make connections within the organization that will help him land a job after he graduates. He credits FFA with helping him identify a burgeoning career path.

"Being part of FFA and getting involved at deep levels opens your eyes to things other people might never know even existed," he says.

— By Jodi Helmer

GOLDEN FARMERS

AN FFA CHAPTER IN ILLINOIS CELEBRATES LOCAL FARMERS WHO'VE SPENT 50 YEARS IN THE FIELD.

An awards ceremony for farmers – that's what the Seneca FFA in Seneca, Ill., wanted to see. "In every other occupation, career milestones are marked with celebrations and gifts," says member Isaac Brockman. "Farmers, however, are never recognized for their longevity in a very challenging occupation."

FFA advisor Jeff Maierhofer's ag management class began talking about the idea, and "it just kind of morphed from there," Maierhofer says. The final plan: a Golden Farmers evening during National FFA Week 2019 honoring 16 farmers older than 70 who have been farming for more than 50 years. (One was 92 years old and still operating a combine.) The gift presented to each honoree read, "Farming: It's not just the way we make our living. It's the

way we make our life."

That sentiment is timeless. Even though decades and technological advancements separate the Seneca FFA members and their honorees, the level of commitment required remains the same. "You have to work hard and be dedicated to get the job done," Maierhofer says. "Hard work will never go away."

Neither will the pride. As the Golden Farmers tearfully shared their stories and answered FFA members' questions, "you could just see the pride these farmers had in their lives," Maierhofer says. "My students can't get that kind of emotion from a textbook."

Maierhofer says his chapter hopes to host similar events every five years, but he'd especially like to see other chapters follow suit to honor the Golden Farmers in their areas.

— By Lauren Denton

Members recognize farmers older than 70 who have been farming for more than 50 years.



NAME: _____

Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-J; FFA.CS-N; AG2; AG5;
CCSS.ELA.SL.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.4; MP4; MP5; MP6; CRP.02;
CRP.04; CRP.06; CRP.08

Appendix 2: Space Farmer

Created: Winter 2019 by the National FFA Organization
Part 1

DIRECTIONS:

Read the article "Futuristic Farming" in the Winter 2019 issue of *FFA New Horizons* and complete the following activities.

What is Grant majoring in that helped him to acquire an internship with NASA?

1. _____
2. _____

Grant is a part of the social media team working to promote which project?

- a. SpaceX Falcon 9
- b. Artemis Project
- c. Apollo Artemis 14



What skills has Grant learned through FFA to help prepare him for his future?

1. _____
2. _____
3. _____

True False

Grant states in the article that FFA competitive events are what led him to pursue a career in space. (Circle the answer.)

Using [AgExplorer](#), identify three careers Grant could have at NASA that utilize the skills he has learned in FFA.

1. _____
2. _____
3. _____

Part 2

DIRECTIONS:

Grant has used skills learned in FFA to land in a career area that is truly out of this world! Let's learn about the food science side of how astronauts eat during their space missions. Watch "Tasting Astronaut Food: Inside NASA's Space Food Systems Laboratory," <https://youtu.be/6vVle67Tfic?t=245> (end at 9:55), and answer the following questions about food during space travel. If the video is unavailable, read the article "Food for Space Flight" from NASA, https://www.nasa.gov/audience/forstudents/postsecondary/features/F_Food_for_Space_Flight.html.



NASA uses packaging that promotes ease of use, product protection and freshness. For beverages, NASA purchases the packaging from which kid-favorite product?

- a. M&Ms
- b. Coca-Cola
- c. Capri Sun
- d. Juicy Juice

What method do food scientists use to prepare many solid foods for flight?

- a. Freezing
- b. Microwaving
- c. Boiling
- d. Freeze drying

Why can't foods go into space in their original packaging?

- a. Some packaging could be flammable
- b. Off-gassing from packaging
- c. Cost effectiveness
- d. All of the above



NAME: _____

Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-J; FFA.CS-N; AG2; AG5;
CCSS.ELA.SL.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.4; MP4; MP5; MP6; CRP.02;
CRP.04; CRP.06; CRP.08

Part 3

DIRECTIONS:

Now that you have a basic understanding of the food science that goes into the feeding of astronauts, let's look at what it may look like for your favorite meal! Complete the following activities to learn more about food in space.

Draw a picture of the packaging and labeling for the main course of the meal as it would appear for traveling to space:

How might this product have to be prepared before packaging for it to be suitable for flight? (Ex. powdered)



List your favorite meal (lunch or dinner):

Main course (Ex. spaghetti):

Side(s) (Ex. broccoli):

Beverage (Ex. lemonade):

Dessert (Ex. brownie):

Draw a picture of the packaging and labeling for the beverage as it would appear for traveling to space:

How might this product have to be prepared before packaging for it to be suitable for flight? (Ex. powdered)

Draw a picture of the packaging and labeling for the side(s) as it would appear for traveling to space:

How might this product have to be prepared before packaging for it to be suitable for flight? (Ex. powdered)



Draw a picture of the packaging and labeling for the dessert as it would appear for traveling to space:

How might this product have to be prepared before packaging for it to be suitable for flight? (Ex. powdered)

(1) Prior to flight, astronauts are able to select a few favorite snacks to accompany them to space to cure those cravings from home. What is your favorite snack? _____

(2) Looking at the food packaging, determine the weight of the product. (Ex. A box of Skittles weighs 2.17 oz.)



(3) According to NASA, to get your favorite food into space for a late-night snack, it costs approximately \$10,000 to put one pound of payload into Earth orbit. So, with this cost in mind, calculate approximately how much it would cost to send your favorite snack into Earth orbit.

Skittles Example

Ex. $0.0625 \text{ lb} = 1 \text{ oz.}$

$2.17 \text{ oz} \times 0.0625 \text{ lb} = 0.1356 \text{ lb}$

$0.13 \text{ lb} \times \$10,000 = \$1,356$

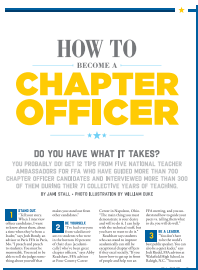


What role does food science play in the aeronautic industry?



NEW HORIZONS

WINTER 2019 TEACHING GUIDE



ARTICLE SUMMARY

How to Become a Chapter Officer

Check out this quick read to learn some great tips from agriculture teachers and FFA advisors about applying and interviewing for a chapter officer position.

BELL RINGER:

Is interviewing for a chapter officer position (or interviewing for another organization in your school) the same as interviewing for a after school job and/or future career? Explain your answer.

DISCUSSION QUESTIONS

1. Define soft skills.
 - a. What are examples of soft skills?
2. How do you think this lesson could influence your future? Explain your answer.

ACTIVITY

Part 1: Begin by having students answer the bell ringer question. Once all students have written an answer, have them discuss and explain their answers with their neighbors. After five minutes, call on a few students to share their answers. Then, pass out the worksheet "How to Become a Chapter Officer" (Appendix 3), and have students read the article "How to Become a Chapter Officer" in the winter issue of FFA New Horizons and answer the associated questions on the worksheet.

Part 2:

Students will research and identify 20 interview questions and will record their findings in the boxes on the worksheet. Students can utilize this website, <https://www.monster.com/career-advice/article/100-potential-interview-questions>, or a similar one to aid in their research. Students will narrow down their findings to 10 interview questions. They will write their answers to those 10 interview questions in the chart on the worksheet. When students have finished writing their answers, they will pair up with another student to practice answering their interview questions. Each student will capture on the worksheet two "gems" (positive aspects) and two "opps" (areas for improvement) for the other student.

FFA TIP

Have your chapter officers set up and host a prep course for FFA members who may want to interview for chapter, regional/district or state office in the future. The chapter officers can map out the overall plan for the prep course (Ex. determine the number of interview rounds, type of rounds, such as agriculture issues, personal interview, etc.). Chapter officers can also be responsible for determining judges for the event.

SAE TIP

Remind members considering a chapter or state office that a strong supervised agriculture experience (SAE) program is required to be eligible. The National FFA Organization Constitution requires chapter officers to hold the Chapter FFA Degree and state officers to hold the State FFA Degree, both of which require a specific level of SAE achievement to earn. Working hard on SAEs also builds skills needed to run for office and succeed as FFA officers.

VOCABULARY

Valedictorian
Demonstrate
Desire
Grit
Extraordinary

EXIT TICKET

Why should we practice interviewing?

CAREER FOCUS AREAS

Any

REFERENCES

100 Top Job Interview Questions —
Be Prepared for the Interview

<https://www.monster.com/career-advice/article/100-potential-interview-questions>

APPENDICES

Appendix 3 - How to Become a Chapter Officer

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.05 • FFA PRECEPTS: FFA.PL-A, FFA.PL-C, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-M, FFA.CS-N • COMMON CAREER TECHNICAL CORE: AG5 • COMMON CORE – SPEAKING AND LISTENING: CCSS.SL.9-10.1, CCSS.SL.9-10.2 • AFNR CAREER READY PRACTICES: CRP04, CRP07, CRP08, CRP10 • P21 SKILLS: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY





HOW TO BECOME A CHAPTER OFFICER



DO YOU HAVE WHAT IT TAKES?

YOU PROBABLY DO! GET 12 TIPS FROM FIVE NATIONAL TEACHER AMBASSADORS FOR FFA WHO HAVE GUIDED MORE THAN 700 CHAPTER OFFICER CANDIDATES AND INTERVIEWED MORE THAN 300 OF THEM DURING THEIR 71 COLLECTIVE YEARS OF TEACHING.

BY JAMI STALL • PHOTO ILLUSTRATION BY WILLIAM DUKE

1

STAND OUT.

“Tell your story. When I interview officer candidates, I want to know about them, about a time when they’ve been a leader,” says Josh Bondy, an advisor at Paris FFA in Paris, Mo. “I preach and preach to students: You must be memorable. You need to be able to tell the judges something about yourself that

makes you stand out from other candidates.”

2

BE YOURSELF.

“I’ve had everyone from valedictorians to students who were in the bottom 10 percent of their class [academically] who’ve been great chapter officers,” says Abby Readshaw, FFA advisor at Four County Career

Center in Napoleon, Ohio. “The main thing you must demonstrate is your desire and will to do it. I can help with the technical stuff, but you have to want to do it.”

Readshaw says students who can stand to improve academically can still be exceptional chapter officers if they excel socially. “If you know how to get up in front of people and help run an

FFA meeting, and you understand how to guide your peers vs. telling them what to do, you will do well.”

3

BE A LEADER.

“You don’t have to be the world’s best public speaker. You can also be a quiet leader,” says Jodi Riedel, FFA advisor at Wakefield High School, in Raleigh, N.C. “You need



“IF YOU ARE THINKING ABOUT RUNNING FOR A POSITION, JUST DO IT. YOU HAVE NOTHING TO LOSE, BUT YOU HAVE EVERYTHING TO GAIN”

★ **ABBY READSHAW**

to be driven, creative, able to work well with the team and be a really good communicator. But there are also remarkable chapter officers who aren't comfortable in front of a crowd.”

Riedel says their chapter secretary is originally from Kenya, and though presenting in front of an audience remains a bit overwhelming for her, her organizational skills and keen attention to detail make her a perfect fit on the officer team.

Bondy agrees. “If you're not a polished speaker, don't

let that stop you. Those skills will come.”

4 MIND YOUR P's.

Leasa Gudderra, the advisor at Gwynn Park FFA in Brandywine, Md., reminds hopeful chapter officers of the Five P's: proper preparation prevents poor performance.

If you're planning to run for chapter officer, she recommends finding out the required duties for that position. Then prepare for your interview and create a brag sheet, or resume,

to share with the panel when you are interviewed. You can even use the FFA Resume Generator at ffa.org/Resume. Gudderra's candidates have panel interviews, during which they're asked to share their interest in the office, discuss their participation in a team activity and then answer multiple interview questions.

5 KNOW THE FAQ's.

The interview process can trip up even the most enthusiastic candi-

dates who are unprepared. Riedel strongly suggests visiting ffa.org to download the Sample Officer Interview Questions. Review them, consider how you'd respond to each and then practice answering them.

6 WORK AS A TEAM.

“You need to check your ego at the door and understand that being a chapter officer isn't about the title,” says Kevy Mendes, FFA advisor at Exeter Union High School in Exeter, Calif. It shouldn't matter what posi-



tion you have; you're part of a team first. If you're willing to work hard to get the job done and have some grit, you can accomplish anything."

Mendes says there's a place for everybody in FFA, and it takes a lot of different personalities and leadership styles to accomplish the goals of chapter officers. "I tell my officer team, 'One person can't make something extraordinary; it takes multiple people to do that. Embracing other people's strengths and weaknesses and building others up is how to reach your goal and have success.'"

7

PUT IN THE TIME.

Being a chapter officer requires more FFA involvement, but the amount varies from one chapter to the next. Riedel recommends you find out the commitment expected and decide if you have the time it takes. Her officer team puts in five additional hours a week, on average. "There's a lot going on when you're in high school — activities, sports, jobs, relationships, family commitments and a lot of drama; it's high school," she says. "You can't have it all, so you have to make decisions based on your priorities. During the interview, if you tell us your top priority is FFA, then you need to be true to that."

However, advisors encourage their officers to manage their time to include other activities. "We want our students to be involved in a lot of other things so they're more well-rounded students," Mendes says. "We help them adjust schedules to make this happen when we can."

"We never want to bombard them with so much activity that they can't do

other things beyond FFA," Bondy adds.

8

JOB SHADOW.

Not sure if you're right for the role?

Shadow your chapter's officers to get a better feel for what they do. "Let your advisor know as soon as you think you might be interested in running," says Bondy. "Then reach out to current officers and become involved in every FFA activity they do. Ask for additional responsibilities. At the end of an event, if they stay to sweep floors, pick up a broom and do the same, or whatever the task may be."

9

BE A TEAM PLAYER.

Riedel says advisors want to be confident that you can work well in a group. "FFA is not run by the president alone. It is run by the entire officer team, so you should be able to show us you are team-oriented," she says. "Playing sports or being in organizations like the Boy Scouts are good examples. A perfect way to also become part of the competition process would be a career development event."

10

EXPECT THE UNEXPECTED.

Chapter officers have admitted they didn't realize all they would enjoy in their roles prior to election. "Our members are prepared for the commitment and work involved, but they're shocked at how much fun they have," Bondy says.

According to Mendes, it's an eye-opener for some chapter officers to learn all the behind-the-scenes planning that goes into hosting

"YOU NEED TO CHECK YOUR EGO AT THE DOOR AND UNDERSTAND THAT BEING A CHAPTER OFFICER ISN'T ABOUT THE TITLE."

★ **KEYV MENDES**

a successful meeting. "Many officers lead from behind (not in the spotlight) to ensure things get done. Some members think being an officer is about leading the group and posing in pictures."

11

JUST DO IT!

"If you are thinking about running for a position, just do it. You have nothing to lose, but you have everything to gain," says Readshaw. "It sounds cheesy, but it's true. It just comes down to 'Are you willing to do it for your chapter, or do you want other people to do it for you?'"

12

IF NOT ELECTED, KEEP TRYING.

"I tell the students we have to prepare for that," says Bondy. "We talk about what they are going to do the next morning and what's that going to look like if they don't get elected. They'll say, 'The next morning the sun will come up, I will go to school and I'll start over.'"

Gudderra has wise advice for members who aren't

elected. "Although this wasn't the right time, that does not mean it will always be that way," she tells them. "It's important to know that you did your best and you are now better prepared to try again next time."

Mendes sees it as a learning experience for FFA members. "Don't let this deter you from doing anything in FFA," she says. "Try again; take more opportunities. One election does not define you. There are plenty of adults in the world who go to job interviews and don't get hired, and they still have to go to more interviews. It's about figuring yourself out, trying harder and making yourself better so the next time you're a stronger candidate."

Riedel also recommends trying again but starting with something smaller like becoming a committee chairperson. "That way, you'll come back and have a new success on your resume that you can talk about in your next interview. Don't give up; see it as a growth opportunity," she says. •

NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J;
FFA.CS-M; FFA.CS-N; CS.05; AG5; CCSS.SL.9-10.1; CCSS.SL.9-10.2; CRP.04; CRP.07; CRP.08; CRP.10

Appendix 3: How to Become a Chapter Officer

Created: Winter 2019 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "How to Become a Chapter Officer" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

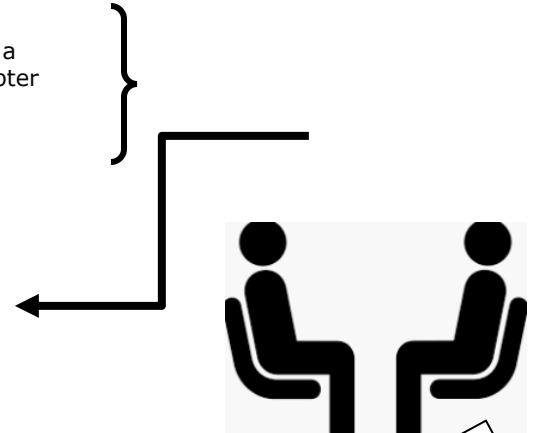
1.

What is one piece of advice from the article that really stood out to you and why?



2.

Based on what you read in the article, what advice would you give to a younger student or your friend regarding interviewing for an FFA chapter office position or other extracurricular activity or for a job?



3. Describe two ways you could apply all the tips in the article to your life:

4. The teachers who were interviewed have a combined total of how many years teaching?

A. 65
B. 71

C. 75
D. 92

NAME: _____

Part 2

1. Research a variety of interview questions, and in the boxes below, record 20 that you find. (Boxes continue on the next page.) (Utilize this website or related websites in your research: <https://www.monster.com/career-advice/article/100-potential-interview-questions>.)

What attracted you to this company?



NAME: _____



3. From the 20 interview questions you identified in Question 1, choose 10 of those questions to answer below. (The chart is continued on the next page.)

Question	Your Answer
<i>Example: What attracted you to this company?</i>	<i>Example: The values of the company are one of the things that attracted me to apply for this position. I have those same values and believe I will be a natural fit within this company.</i>

NAME: _____

Question	Your Answer

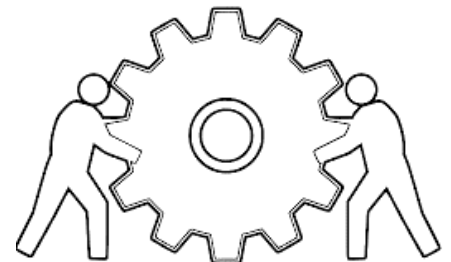
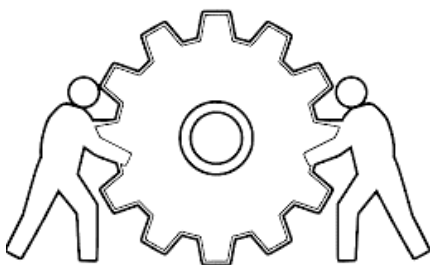
What was one question that was difficult to answer and why?

What was one question that was easy to answer and why?

NAME: _____

4. Pair up with a seat mate and take turns asking each other the interview questions. When it is your turn to ask questions, think of two "gems" and two "opps" for your partner. (*"Gems" are considered positive feedback and "opps" are things they can work or improve on.*) Examples of "gems" and "opps" are included below. ****You can also reference the Employability Skills Handbook, Personal Interview Rubric (<https://ffa.box.com/s/wbuf76xhx3xn4blorqaij2vh8cc6mtpb>) on pages 12 to 14 for more information.**** Record your feedback in the chart below.

Gems:	Opps:
<i>Examples:</i> -The person is easy to follow and does not speak too fast. -They give detailed answers.	<i>Examples:</i> -Try not to say "um" as much. -Answers were only a few words. Try to give detailed information in your answers.





NEW HORIZONS

WINTER 2019 TEACHING GUIDE



On the RECORD

Scott STUMP

ARTICLE SUMMARY

On the Record: Scott Stump

Read this Q and A about Scott Stump, Assistant Secretary for Career, Technical and Adult Education at the U.S. Department of Education, to learn how his background in FFA helps him in his career.

BELL RINGER:

How could FFA experiences impact someone's career with the U.S. Department of Education?

DISCUSSION QUESTIONS

1. Identify people in your local community government or school board.
 - a. What laws or proposals have they worked on in the past that affected education?
2. Do you think it is important to know your local, state and national leaders (senators, representatives)? Explain your answer.

ACTIVITY

Part 1: Begin by having students answer the bell ringer question. Once all students have written an answer, have them discuss and explain their answers with their neighbors. After five minutes, call on a few students to share their answers. Then, pass out the worksheet "On the Record" (Appendix 4), and have students read the article "On the Record: Scott Stump" in the winter issue of FFA New Horizons and answer the associated questions on the worksheet. Students will research, using their state's government website, to learn who their state senators and representatives are.

Part 2: Students will learn the process for registering to vote and the steps it entails. Students will utilize the website Rock the Vote, <https://www.rockthevote.org/voting-information>, or one similar, to complete the worksheet.

FFA TIP

Have your chapter officers and members organize a "Rock the Vote" voter registration drive at school during lunch or another appropriate time to educate other students on the importance of voting.

SAE TIP

Assign students to explore different federal, state and private non-agricultural production jobs that promote, regulate, inspect, educate about or research for or about agriculture. What SAE opportunities exist to prepare for such career in your area?

VOCABULARY

Ewes
Extemporaneous
Entrepreneurship

EXIT TICKET

Who is a local official in your community that works closely with the agricultural industry?

CAREER FOCUS AREAS

Agricultural Education

REFERENCES

Rock the Vote

<https://www.rockthevote.org/voting-information>

APPENDICES

Appendix 4 - On the Record

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.05 • FFA PRECEPTS: FFA.PL-A, FFA.PL-C, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-M, FFA.CS-N • COMMON CAREER TECHNICAL CORE:

AG5 • COMMON CORE - SPEAKING AND LISTENING: CCSS.SL.9-10.1, CCSS.SL.9-10.2 • AFNR CAREER READY PRACTICES: CRP.04, CRP.07, CRP.08, CRP.10 • P21 SKILLS: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY



FFA runs deep in Scott Stump's blood. It started in Lagrange County, Ind., where his father, Ned Stump, was the agriculture teacher at Prairie Heights High School for 37 years. Later, Scott Stump was an agriculture teacher himself. Then he moved on to work for the National FFA Organization. Today, he's the assistant secretary for career, technical, and adult education at the U.S. Department of Education, serving as a principal advisor to Secretary of Education Betsy DeVos. We recently asked him about his background in FFA and how it serves him yet today.

On the **RECORD**

“ SAY ‘YES’ TO ALL OPPORTUNITIES THAT AGRICULTURAL EDUCATION AND FFA OFFER. ”

Scott **STUMP**

Q: WHAT DO YOU REMEMBER ABOUT YOUR FFA EXPERIENCE?

A: My supervised agricultural experience (SAE) was ownership of a small flock of breeding ewes. For placement experience, I milked cows for neighbors and worked at a local equipment dealership. FFA drove our family calendar like the seasons.

It led me to Purdue University and serving with the 1986-87 Indiana FFA state officer team. I found that building people and building systems that build people is my purpose in life.

I began my professional career as the agriscience teacher at Manchester High School in North Manchester, Ind. We expanded enrollment in the program from 30 to 137 students.

Q: WHAT DO YOU LIKE BEST ABOUT YOUR CURRENT JOB AT THE DEPARTMENT OF EDUCATION?

A: I was sworn in on July 30, 2018, and on my second day on the job, President Trump signed the Strengthening Career and Technical Education Act. It invests \$1.3 billion in career and technical education. The best part of my job is helping states leverage the flexibilities in this new law.

There is a current skills gap in this nation that can be fixed by engaging students earlier in career-based pathways like those offered in agricultural education and FFA.

Q: WHAT'S YOUR ADVICE FOR MEMBERS CONTEMPLATING A CAREER IN FOOD AND AGRICULTURE?

A: Say “yes” to all opportunities that agricultural education and FFA offer. When your agriculture instructor says, “You should consider the extemporaneous speaking contest,” say, “Yes, I will give that a try.” Or, “You are ready to expand your SAE to true entrepreneurship,” say, “I will give it a shot!” In each case, you’re advancing toward a better future.

The experiences I had in the blue and gold jacket (it’s still in my office at the Department of Education!) prepared me to make a positive difference in the role in which I serve today.

— By Gene Johnston

NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J;
FFA.CS-M; FFA.CS-N; CS.05; AG5; AGC09.02; CCSS.SL.9-10.1;
CCSS.SL.9-10.2; CRP.04; CRP.07; CRP.08; CRP.10

Appendix 4: On the Record

Created: Winter 2019 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "On the Record: Scott Stump" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

1. What is one fact that stood out to you after reading the article? Why?



2. Who are your state representatives and senators? (Tip: Visit your state's government page to locate your state leaders. For example, Indiana's would be www.in.gov.)

State Senator

Name: _____

Circle: Republican or Democrat

Hometown: _____

What legislature/causes do they support? _____

State Senator

Name: _____

Circle: Republican or Democrat

Hometown: _____

What legislature/causes do they support? _____



State Representative

Name: _____

Circle: Republican or Democrat

Hometown: _____

What legislature/causes do they support? _____

State Representative

Name: _____

Circle: Republican or Democrat

Hometown: _____

What legislature/causes do they support? _____



Why do you think it is important to know what the state leaders support?

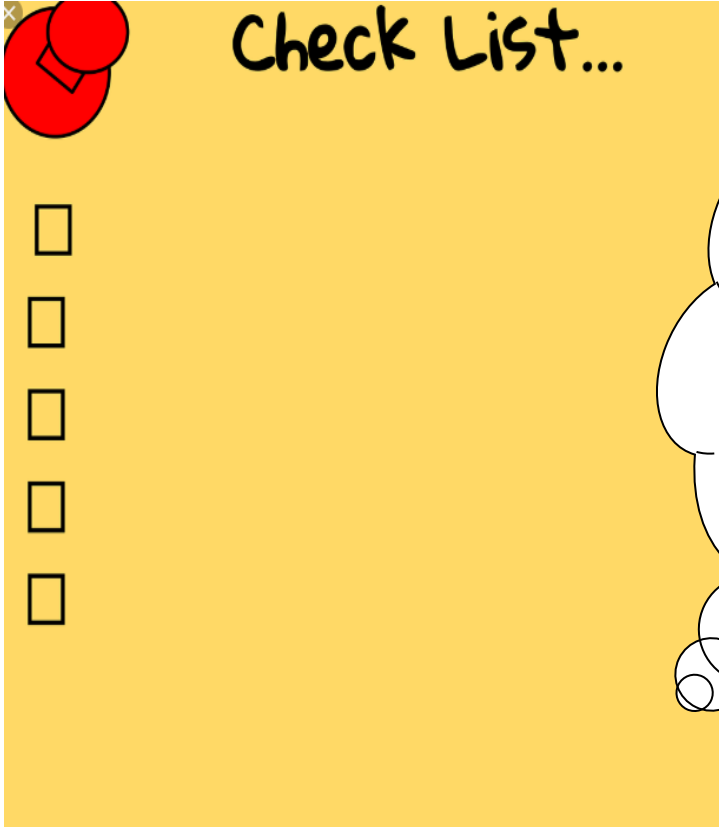


NAME: _____

Part 2

How do you sign up to vote? Visit the website Rock the Vote (<https://www.rockthevote.org/voting-information/>) to learn more about voting policies and how to sign up to vote.

1. Click on the website link above, then on your state to learn about the specific voting policies. Identify those policies in the box below. *(Utilize the checklist below to record your state's voting policies. If there are not five policies, fill in the checklist as appropriate. If there are more than 5, add those at the bottom of the checklist.)*



Check List...

☐

☐

☐

☐

☐

Do you think it is important to vote? Explain why or why not.

2. What information should you know in order to prepare to vote? (Tip: Click on the "Prepare to Vote" tab on the left side of the page after you have selected your state. Utilize this information to answer the question.)

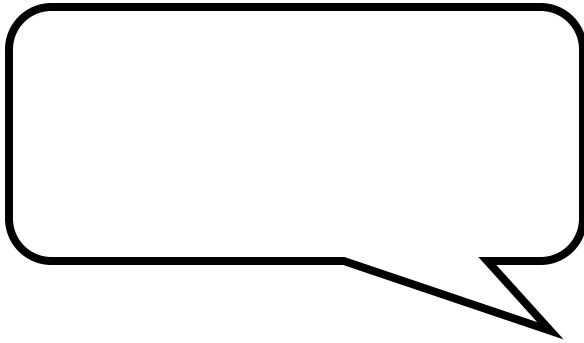


3. What overall impact do you think voting has on our government and economy?

NAME: _____

4. Summarize, in a paragraph, what you learned after reading the article and completing the activities:

5. Create a hashtag to share on social media to promote voting among your classmates.





NEW HORIZONS

WINTER 2019 TEACHING GUIDE



ARTICLE SUMMARY

Charting Her Path

How can agriculture help you gain a career, even if it's not in the agriculture industry? Read this exciting story about how one former member used her FFA experience to end up in satellite imagery.

BELL RINGER:

How can challenges in your life have a positive effect?

DISCUSSION QUESTIONS

1. What are some challenges of starting your own business?
2. What are some advantages or perks of starting your own business?
3. What is a career you are interested in? How does it relate to agriculture?

ACTIVITY

Part 1: Begin by having students answer the bell ringer question. Once all students have written an answer, have them discuss and explain their answers with their neighbors. After five minutes, call on a few students to share their answers.

Then, pass out the worksheet "Charting Her Path" (Appendix 5), and have students read the article "Charting Her Path" in the winter issue of FFA New Horizons and answer the associated questions on the worksheet.

Part 2: Students will complete the chart on the worksheet and will identify skills learned in their agricultural class and how they affect other areas in their life.

Part 3: After completing the chart in Part 2, students will go to AgExplorer (AgExplorer.com) and complete the Career Finder assessment. Students will record their findings on the worksheet.

FFA TIP

Have your chapter officers and members organize a job fair at your school. The job fair should include employers in your community who need students for summer internships, part-time jobs during the school year and summer jobs.

SAE TIP

Have students list the skills and lessons learned from their own supervised agricultural experience (SAE) programs, or the SAEs they are planning, that could be used in other careers.

VOCABULARY

Intentional
Forecasting
Imaging
Aerospace
Enamored
Yield
Transparency
Bias

EXIT TICKET

What is one thing about this article that stood out to you? How can you take what you have learned and apply it in your life?

CAREER FOCUS AREA

Agribusiness Systems

REFERENCES

AgExplorer: AgExplorer.FFA.org

RESOURCE HIGHLIGHT

FFA Resume Generator

<https://resumegenerator.ffa.org>

(Will be prompted to log in to your FFA account in order to access.)

APPENDICES

Appendix 5 - Charting Her Path

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.05 • FFA PRECEPTS: FFA.PL-A, FFA.PL-C, FFA.PL-E, FFA.PL-F, FFA.PG-I, FFA.PG-J, FFA.CS-M, FFA.CS-N • COMMON CAREER TECHNICAL CORE: AG5 • COMMON CORE – SPEAKING AND LISTENING: CCSS.SL.9-10.1, CCSS.SL.9-10.2 • AFNR CAREER READY PRACTICES: CRP04, CRP07, CRP08, CRP10 • P21 SKILLS: COMMUNICATION, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY



PREMIER *leadership*

CHARTING *Her* PATH

A detour from agriculture gave CEO Megan Nunes the insight she needed to help improve it.

Megan Nunes has an interesting piece of advice for those looking to make waves in agriculture: “Don’t be afraid to explore other industries.”

Leaving agriculture, though more accidental than intentional, led her to find the solutions she offers the industry today. The former California regional FFA officer currently sits at the top of San Francisco-based Vinsight, a forecasting software company for grape and almond crops. She started the company in 2015 after eight years in satellite imaging.

Having grown up in a farming family in California’s Central Valley, Nunes majored in dairy science at Cal Poly with plans to become a lawyer to help improve air and water quality in the dairy industry. Around the same time that she discovered law was not for her, she started working part time at an aerospace company. “That completely changed my path,” Nunes says.

“I became enamored with this new world. I thought I’d always be very involved in agriculture. Then I took this part-time job and thought I’d stay in aerospace.”

It turns out she could incorporate both. While analyzing data sets created by satellite imagery, Nunes began to question how this technology could improve agriculture. “My curiosity catapulted me,” she says. “I wanted to be a part of that shift in the future of agriculture. I wanted to give back.”

She quit her job as a chief operating officer and spent six months brainstorming a business idea. In that time, she discovered a need for more actionable data for high-value specialty crops, and Vinsight was born. Launched exclusively with

grapes (thanks to a partnership with a local orchard), Vinsight analyzes satellite imagery, weather trends and historical yield data to predict yields. The company now also services almonds and will have eight crops, including walnuts, strawberries and hops, next growing season.

Starting her own business has had “a lot of peaks and valleys,” Nunes says. One of the biggest challenges: overcoming farmers’ skepticism. “Getting customers to share yield data was a big ask. But from the beginning, we have built our company on the core values of trust, transparency, not overpromising or underdelivering. Building that

kind of relationship with our customers has allowed us to get to this point. Our customers are incredibly happy.”

What’s not much of a challenge is being a woman. “Don’t let gender bias influence your

capabilities,” she says. “I grew up one of four girls, and my parents told us we could do anything we wanted to. Gender doesn’t play a role in my importance.” Instead, Nunes attributes her success to grit, determination, confidence, a strong support system, insatiable curiosity and “being scrappy and a problem solver” — all leadership traits she developed through her years in FFA.

“I was very active in FFA in my early high school years, and that is the time we develop our character and formulate our own ideas,” Nunes says. “Because I had so many teachers and mentors pour into me, that foundation gave me a jump-start and propelled me forward. FFA really is a rare resource that sets you apart in the working world.”

**“DON’T LET
GENDER BIAS
INFLUENCE YOUR
CAPABILITIES.”**
— MEGAN NUNES

— By Lauren Denton

Photography: Courtesy Megan Nunes

NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J;
FFA.CS-M; FFA.CS-N; CS.05; AG5; AGC09.02; CCSS.SL.9-10.1;
CCSS.SL.9-10.2; CRP.04; CRP.07; CRP.08; CRP.10

Appendix 5: Charting Her Path

Created: Winter 2019 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "Charting Her Path" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

1. Megan Nunes was a former _____ regional FFA officer.
- Ohio
 - New York
 - Tennessee
 - California

2. What type of farm did Megan grow up on?
- Cattle
 - Grain
 - Dairy
 - None of the above

3. What is Vinsight?

4. What crop was Vinsight launched with?

- Grain
- Almonds
- Grapes
- None of the above

5. What is some advice that Megan gave?



6. Where is Vinsight located?

- Chicago
- New York
- San Francisco
- None of the above



7. How can you apply the advice Megan gave?

NAME: _____

Part 2

In the chart below, brainstorm skills you have learned in your agriculture classes and how they have impacted various areas of your life. Start at the left with sports and extracurricular activities and move to the right to complete the chart.

1. What skills have you learned in your agriculture class?

SKILLS

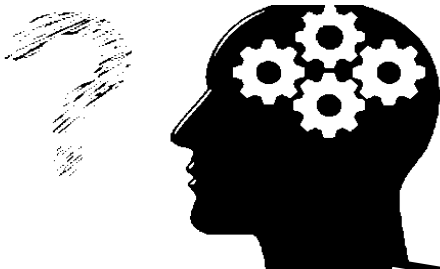
Sports/Extracurricular activities:

Family/Friends:

How do skills learned in agriculture class help you in these areas? (Explain your answers in each of the boxes.)

Other school classes:

How could skills learned in agriculture class help you in your future career?



2. How do skills learned in each of these areas (identified in the boxes above) help you in agriculture class and/or FFA?

3. Think about two skills that need improvement in your life. List those skills below and brainstorm ideas about how to improve.

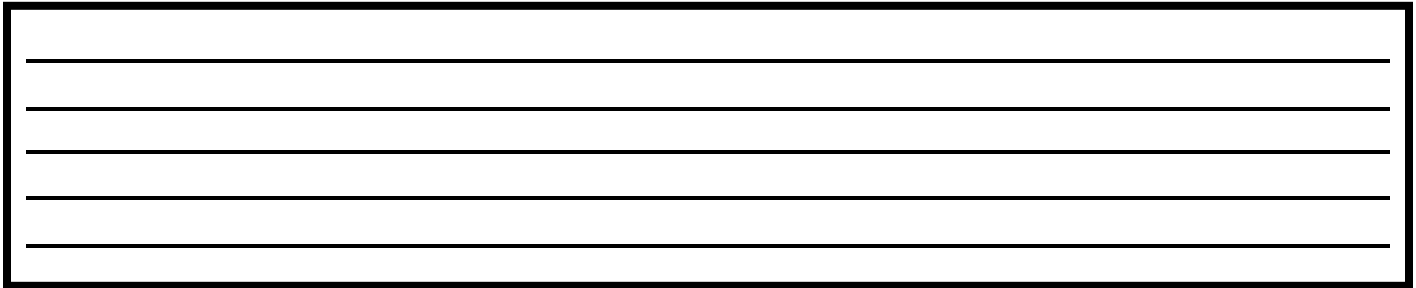
NAME: _____

Part 3

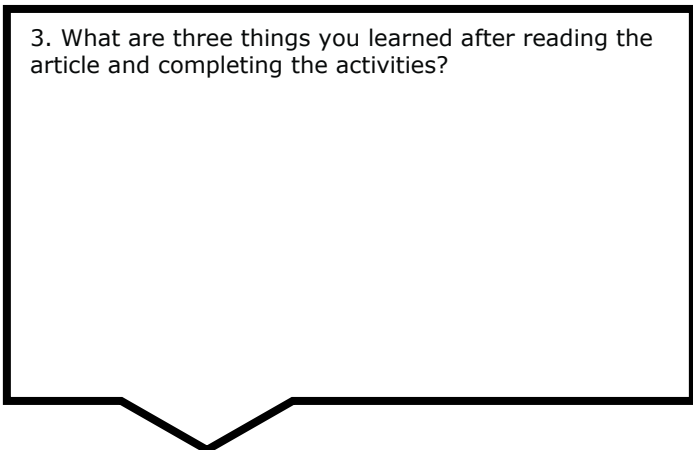
1. Go to AgExplorer (AgExplorer.FFA.org) and click on Career Finder at the top of the screen. Complete the questions on the Career Finder and record your results below:



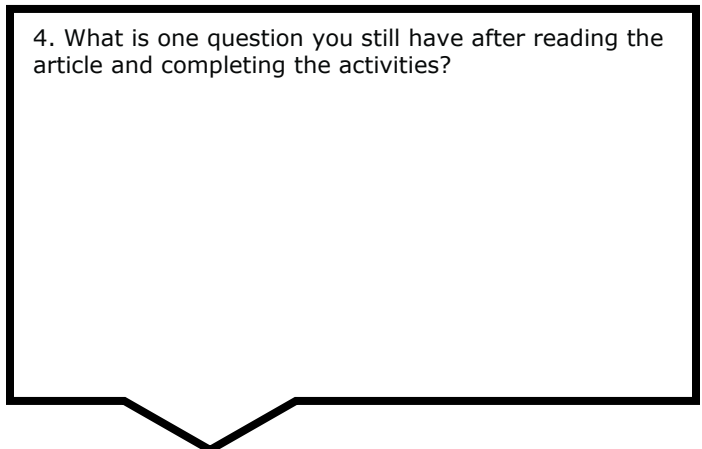
2. Out of the results given to you, which one is of interest to you? (*If you did not receive any careers that interest you, what career area interests you and why?*)



3. What are three things you learned after reading the article and completing the activities?



4. What is one question you still have after reading the article and completing the activities?





NEW HORIZONS

WINTER 2019 TEACHING GUIDE



ARTICLE SUMMARY

Global Impact

When you have a connection with a school in another country, you learn about that school and find ways to work with and learn from the students. One U.S. school found their sister school in Congo and were determined to help make a difference.

BELL RINGER:

Describe the impact you have in your school.

DISCUSSION QUESTIONS

1. Why is it important to help others?
2. What impact does goat production have on the economy?
3. What products are produced by goats?

ACTIVITY

Part 1: Begin by having students answer the bell ringer question. Once all students have written an answer, have them discuss and explain their answers with their neighbors. After five minutes, call on a few students to share their answers.

Pass out the worksheet "Making a Global Impact" (Appendix 6) to each student. Have students read the article "Global Impact" in the winter issue of FFA New Horizons and answer the first three questions on the worksheet.

Part 2: Students will utilize the Tractor Supply Company website to explore the basics of goat care and learn important terminology. Discuss the information with students once they have completed this portion of the lesson.

Part 3: Students will determine the impact of goats on the economy by analyzing the prevalence of goats across the globe. Students will then explore the products that come from goats through their meat, fiber and milk. Finally, students will develop a 30-minute radio segment to share the importance of the goat industry and its impact on the daily lives of humans. Note: If internet access is not available, hand out the "Goat Information Sheet" to help students work through the activities.

Have students complete the exit ticket before leaving class.

FFA TIP

Students can engage in the goat industry by participating in the livestock evaluation career development event (CDE).

SAE TIP

Check out the [service-learning SAE type](#) and the [service-learning proficiency award](#) description in the 2019–20 Proficiency Award List to learn how an agriculturally based service project can be part of a student's supervised agricultural experience (SAE) program.

VOCABULARY

Artisan

Democratic Republic of Congo
Service

EXIT TICKET

What role do goats have in the economy?
What would happen if goats were no longer an option for the animal industry?

CAREER FOCUS AREA

Animal Science

REFERENCES

Tractor Supply Company: <https://www.tractorsupply.com/learn-how-pets-live-stock-livestock-other-goat-goat-care-for-beginners-how-to-care-for-goats>

American Goat Federation: <https://americangoatfederation.org/goat-products/>

APPENDICES

Appendix 6 - Making a Global Impact

STANDARDS ALIGNMENT

AFNR PERFORMANCE ELEMENT: CS.02 • FFA PRECEPTS: FFA.PL-A, FFA.PL-E, FFA.PG-J, FFA.CS-M, FFA.CS-N • COMMON CAREER TECHNICAL CORE: AG2 • COMMON CORE – READING: INFORMATIONAL TEXT: CCSS.ELA.RI.9-10.4 • COMMON CORE – WRITING: CCSS.ELA.W.9-10.2 • COMMON CORE – SPEAKING AND LISTENING: CCSS.ELA.SL.9-10.1, CCSS.ELA.SL.9-10.4 • COMMON CORE – MATH PRACTICES: MP1, MP5, MP6 • AFNR CAREER READY PRACTICES: CRP.02, CRP.04, CRP.07 • P21 SKILLS: COMMUNICATION, GLOBAL AWARENESS, INITIATIVE AND SELF-DIRECTION, LEADERSHIP AND RESPONSIBILITY, THINK CREATIVELY

Global IMPACT

**A CALIFORNIA FFA CHAPTER CELEBRATES NATIONAL FFA WEEK 2019
BY RAISING FUNDS FOR IMPOVERISHED STUDENTS IN THE CONGO.**

To celebrate its chapter's first National FFA Week, the Temecula St. Jeanne Catholic FFA of Saint Jeanne de Lestonnac Catholic High School in Temecula, Calif., hosted a local event that had a global impact likely to be remembered and appreciated for years to come.

According to Marlisa Nordstrom, the Temecula St. Jeanne Catholic FFA Chapter advisor and National Teacher Ambassador for FFA, members felt passionate about engaging in a service project and wanted to do something that would benefit another St. Jeanne Catholic School. Members discovered they had a sister school in Central Africa's Democratic Republic of Congo, and after learning how much the Congolese depended on goats for adequate nutrition, they decided to organize an event raising funds to purchase goats for their peers across the globe.

The event took place on Feb. 23, 2019, and drew about 120 people. It featured a goat cheese discussion and tasting led by a local chef along with bread from an artisan baker, treats created by a specialty dessert chef and a wine tasting.

The Temecula St. Jeanne Catholic FFA raised \$2,000 from ticket sales, which was donated to its sister school and was used to purchase 50 goats.

"Our FFA program is brand-new – it just started in 2018 – so this event was a great opportunity to share our mission with members of the community while raising money so we could help others," Nordstrom says. "As a Catholic school, one of the pillars of our faith is service, so celebrating National FFA Week with a service project made perfect sense to our chapter. We plan to do something similar every year from now on."

— By Jessica Walker Boehm



The Temecula St. Jeanne Catholic FFA event raised funds for peers across the globe.

CALENDAR

First Monday of Each Month:

NEW LIVING TO SERVE CHAPTER CHALLENGE

Help us reach 930,000 hours of service by the 93rd National FFA Convention & Expo. Learn more by visiting FFA.org/LivingToServe.

Dec. 15:

SPRING SEMESTER-LONG LIVING TO SERVE GRANT APPLICATION OPENS

Semester-long grants provide chapters with up to \$1,200 per semester to implement a service-learning project in their community. Visit FFA.org/LivingToServe/Grants to apply.

Jan. 1:

NATIONAL FFA SCHOLARSHIP APPLICATIONS DUE

Scholarships are sponsored by businesses and individuals and are handed out for a variety of experiences, career goals and higher-education plans. To apply, visit FFA.org/Scholarships.

Jan 1:

FFA WEEK DAY OF SERVICE MINI-GRANTS DUE

Chapters can receive a grant of up to \$400 to support their FFA Week service activities. To access the application, visit FFA.org/LivingToServe/Grants.

Feb. 22-29:

NATIONAL FFA WEEK

Celebrate alongside members from across the country. Find event ideas and resources at FFA.org/FFAWeek.

Feb. 25:

GIVE FFA DAY

Give now at donate.FFA.org to help prepare and inspire FFA members to become active leaders in agriculture.

Feb. 27:

ALUMNI DAY

Celebrate the important role alumni and supporters play in ensuring student and chapter success. Be sure to share your stories using [#FFAalumni](https://twitter.com/FFAalumni).

NAME: _____

Appendix 6: Making a Global Impact

Created: Winter 2019 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "Global Impact" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

1. What country did the FFA chapter decide to help?

2. Locate and color in this country on the map.



3. What animal does this country have a great dependence on?

Part 2

DIRECTIONS:

Using the Tractor Supply Company website (https://www.tractorsupply.com/know-how_pets-livestock_livestock-other_goat_goat-care-for-beginners-how-to-care-for-goats), explore the basics of goat care. If internet access is not available, ask your teacher for the Goat Information Sheet.

What does the term ruminant mean?

- a. The animal has four stomachs.
- b. The animal has a four-chambered stomach.
- c. The animal has a stomach like humans.

What does it mean if an animal is chewing its "cud"?

- a. The animal is eating.
- b. The animal is consuming salt.
- c. The animal is chewing regurgitated food.

Minerals are important for humans and goats. Goats should be given salt with trace amounts of selenium. Draw selenium's square as shown on the periodic table.

Atomic Number	→	
Symbol	→	
Name	→	



True or False
Cartoons show goats eating just about everything regardless of nutrition. Is this true or false?

Which of the following plants are considered poisonous and should not be consumed by a goat? Place a red X over the poisonous plants.



Collard Greens



Hemlock



Lilac



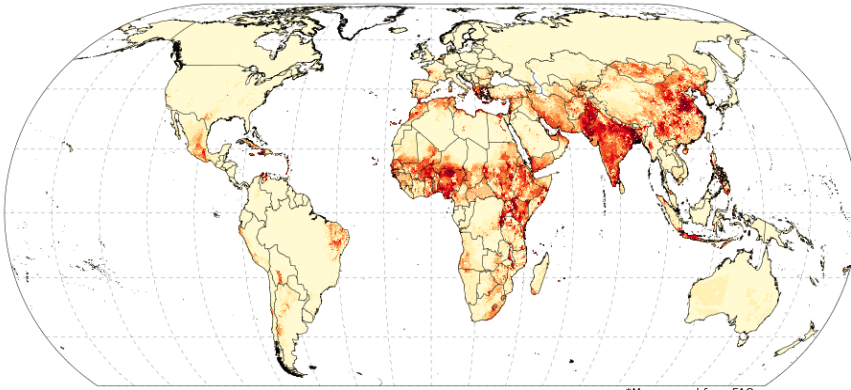
Azalea

NAME: _____

Part 3

DIRECTIONS:

Goats are incredibly important across the globe. Learn where goats are most commonly produced and why by completing the following activities.



The map to the left depicts the density of goats in a region. The darker the red the more goats present. Why do you think the goat density is so high in some areas? What about those areas may lead to more goats being raised?

*Map sourced from FAO.

DIRECTIONS:

Goats are beneficial because they can provide milk, meat and fiber, depending on the breed. Using the [AgMRC website https://americangoatfederation.org/goat-products/](https://americangoatfederation.org/goat-products/), complete the following activities to learn about goat products. If internet access is not available, ask your teacher for the Goat Information Sheet.

Goat Fiber

- What are the two main types of fiber acquired from goats?
 1. _____
 2. _____
- Identify two products that can be made from the fiber of goats.
 1. _____
 2. _____

Goat Milk

- Why is goat's milk considered to be so nutritional?
- Identify three products that can be produced from goat's milk.
 1. _____
 2. _____
 3. _____

Goat Meat

- What term is used to identify goat meat (40–60lb butcher weight)?

- Goat meat is a great option for those that need to do what in their diet?

DIRECTIONS:

Develop a 30-minute radio segment to share with consumers how goat products affect their daily lives.

What is the economic impact of goats in the U.S.?

NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

KEY — Appendix 1: Sweet Success

Created: Winter 2019 by the National FFA Organization
Part 1

DIRECTIONS:

Read the "Sweet Success" article in the Winter 2019 issue of *FFA New Horizons* and complete the following activities.

Where is Henry's family farm located?

- a. Worcester, MA
- ☒ b. Chesterfield, MA
- c. Framingham, MA
- d. Paradise, MA

How many trees does the Wimago FFA Chapter tap for sap on campus?

- a. 20
- b. 60
- ☒ c. 80
- d. 100

Which of the following is not listed as part of Henry's coursework?

- a. Sales and marketing
- b. Syrup production
- ☒ c. Fermentation science
- d. Forest management



According to the United States Department of Agriculture, American sugar-makers collected sap from 13.3 million taps and produced more than 4.24 million gallons of maple syrup last year.

What is one of the biggest challenges Paradise FFA faces in its syrup production? The season is short, making it a rush to gather the sap. The chapter also lacks its own sugarhouse so they have to boil the sap over an open fire or transport the sap to a local sugarhouse.



Why do you think syrup is primarily produced in the Northeastern United States? Answers will vary. Examples could include climate, soil type, tree variety availability, etc.

NAME: _____

Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Part 2

DIRECTIONS:

Maple syrup production plays a large role within the economy. Using the information below, explore the production process for syrup in the United States.

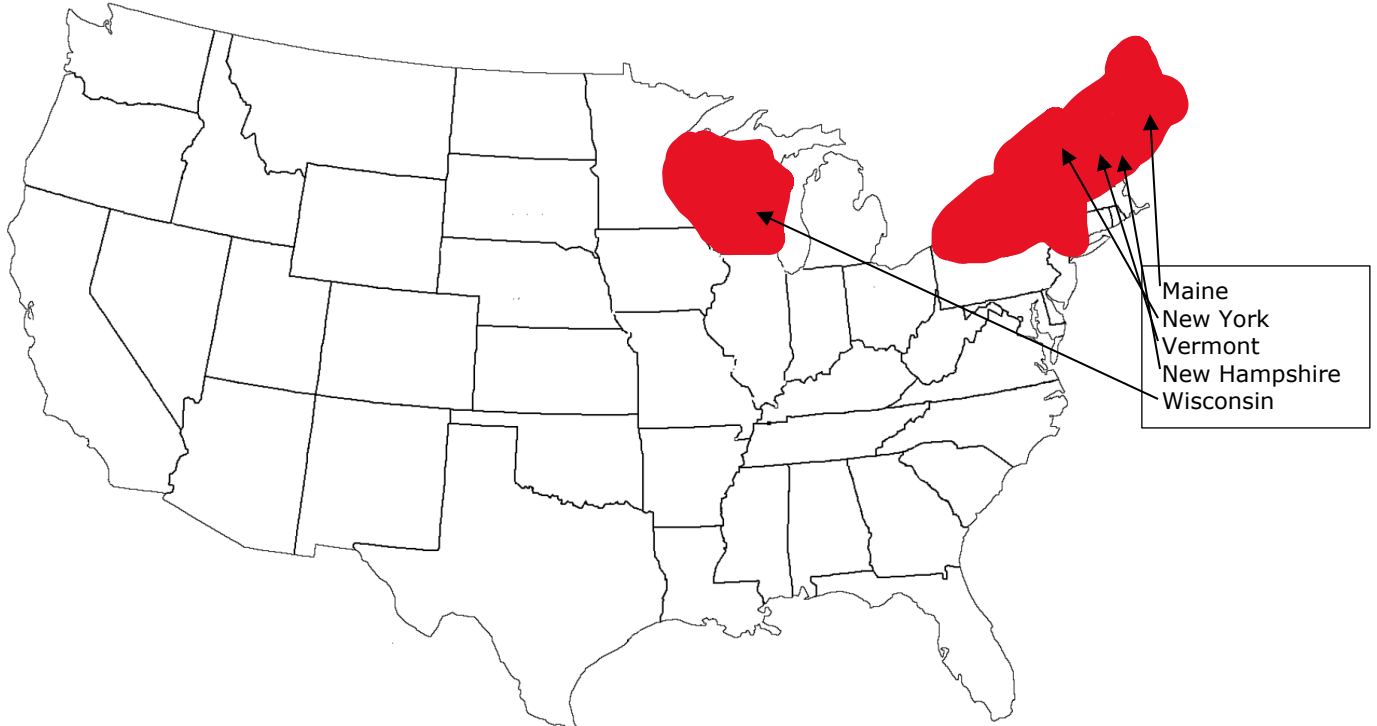
The following table from the USDA depicts the state syrup production in the U.S. Use this table to complete the following:

- (1) In green, underline the top five syrup-producing states in 2018.
- (2) In red, circle the total amount of syrup produced by the United States in 2018.
- (3) On the map below, locate, label and color the top five syrup-producing states in 2018.
- (4) Using the outline below, create a bar graph that depicts the amount of maple syrup produced by the top five producing states. Include labels and a title.

Maple Syrup Taps, Yield, and Production – States and United States: 2016-2018

State	Number of taps			Yield per tap			Production		
	2016	2017	2018	2016	2017	2018	2016	2017	2018
	(1,000 taps)	(1,000 taps)	(1,000 taps)	(gallons)	(gallons)	(gallons)	(1,000 gallons)	(1,000 gallons)	(1,000 gallons)
Connecticut	85	86	73	0.224	0.233	0.247	19	20	18
Indiana	60	62	70	0.200	0.194	0.257	12	12	18
<u>Maine</u>	1,860	1,890	1,870	0.363	0.375	0.288	675	709	539
Massachusetts	315	320	320	0.244	0.263	0.225	77	84	72
Michigan	400	440	455	0.225	0.250	0.275	90	110	125
Minnesota	76	77	65	0.184	0.182	0.200	14	14	13
<u>New Hampshire</u>	545	550	560	0.310	0.280	0.291	169	154	163
<u>New York</u>	2,515	2,650	2,730	0.281	0.287	0.295	707	760	806
Ohio	370	400	400	0.189	0.200	0.225	70	80	90
Pennsylvania	660	660	670	0.217	0.211	0.212	143	139	142
<u>Vermont</u>	4,850	5,410	5,670	0.410	0.366	0.342	1,990	1,980	1,940
West Virginia	51	61	66	0.118	0.148	0.121	6	9	8
<u>Wisconsin</u>	765	735	750	0.307	0.272	0.300	235	200	225
United States	12,552	13,341	13,699	0.335	0.320	0.304	4,207	4,271	4,159

(3)

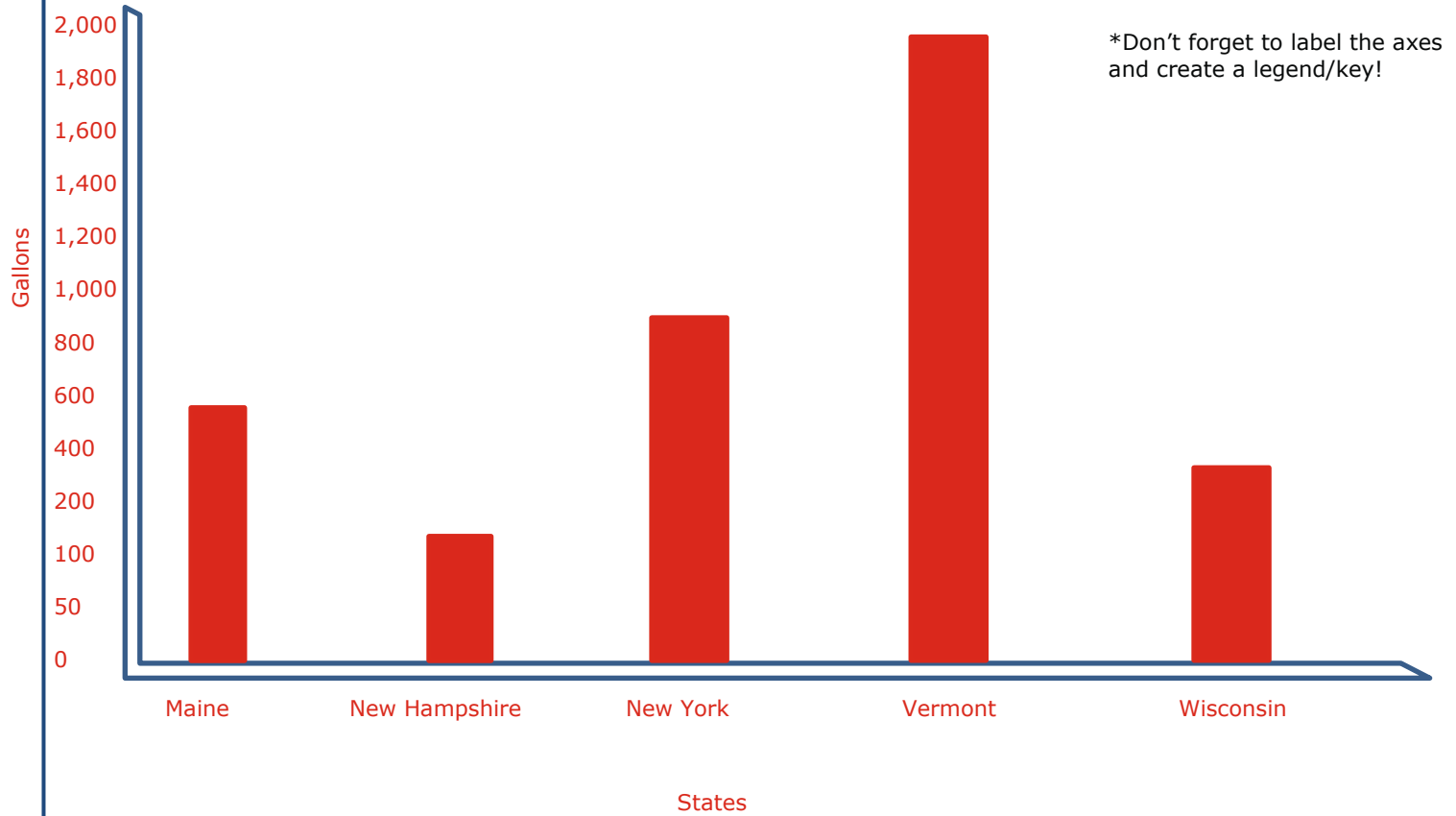


NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

(4) Example bar graph. Look and labels of graph may vary by student.

Table Title: United States Syrup Production



What surprises you about syrup production in the United States? *Answers will vary.*

What do you predict will be the future of maple syrup production? *Answers will vary.*



Using [AgExplorer](#), identify three careers you could have within the maple syrup production industry and the education required to acquire that career. *Answers will vary.*

2. _____
a. Education: _____

3. _____
a. Education: _____

4. _____
a. Education: _____



NAME: _____

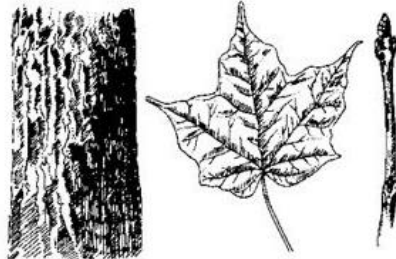
Aligned to the following standards:

CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

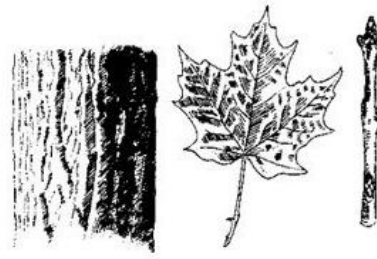
Part 3

You cannot collect sap for syrup from just any tree. You must select the correct tree. Here are three different types of trees that can be used for sap collection. In this box, identify the similarities and differences between the three trees. Consider the leaves, buds and tree bark.

Three lobed leaves,
dull rounded buds,
deeper bark grooves

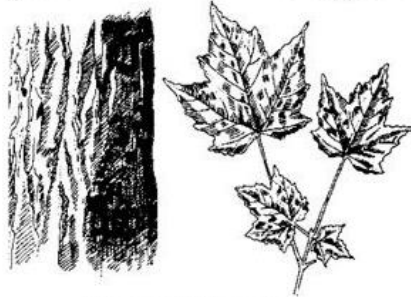


Black Maple



Sugar Maple

Five lobed leaves,
sharp buds, thick
long strips of bark



Red Maple

Three lobed leaves,
smooth bark that
can become scaly

*Image sourced from [Penn State Extension](#).

Go outside and select a tree that grows in your area. Take a picture or draw a picture of the leaves (if it's not winter), buds and bark and place it here. What are the differences and similarities between the tree that grows near you and the three above used for sap?

Answers will vary.



What impact would a plant disease moving through the trees used for syrup production have on the industry? Plant disease would decrease sap production, which would decrease the amount of syrup produced. A decrease in overall syrup production could cause an increase in price.

NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PG-I; FFA.PG-J; FFA.CS-N; AG-PL2; AG2; AG5; CCSS.ELA.RI.9-10.2; CCSS.ELA.RI.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.06; CRP.08

Part 4

Maple syrup production is an important commodity in the United States. Surprisingly, few tools are needed in order to produce syrup at home. Using the [Tractor Supply Company](#) website, create a list of supplies you would need if you wanted to make syrup. Research the cost for each needed supply to determine your startup cost. **Cost will vary.**

1. Drill and 5/16 in. drill bit \$ _____
2. Stainless steel bucket spout \$ _____
3. Hammer \$ _____
4. Aluminum sap bucket with lid \$ _____
5. Candy thermometer \$ _____
6. 3-gallon stainless steel pot \$ _____

What are the steps in the syrup production process? List each step and draw a picture to depict the step. HINT: Use the side column in your *FFA New Horizons* article to find the steps with a description.

1. **Insert taps into sugar maple trees.**

Picture will vary.

2. **Collect sap.**

Picture will vary.

3. **Boil Sap.**

Picture will vary.

4. **Filter syrup.**

Picture will vary.

5. **Bottle syrup.**

Picture will vary.

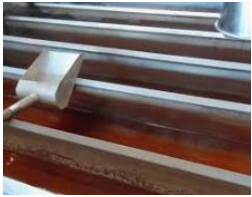
6. **Pour over pancakes and enjoy!**

Picture will vary.



What safety equipment or personal protective equipment (PPE) should be utilized during the syrup production process?

Answers will vary. Examples may include safety glasses, gloves, closed toe shoes, etc.



NAME: _____

Aligned to the following standards:
CS.02; CS.05; FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PG-J; FFA.CS-N; AG2; AG5;
CCSS.ELA.SL.9-10.2; CCSS.ELA.RI.9-10.3; CCSS.ELA.RI.9-10.4; MP4; MP5; MP6; CRP.02;
CRP.04; CRP.06; CRP.08

KEY — Appendix 2: Space Farmer

Created: Winter 2019 by the National FFA Organization
Part 1

DIRECTIONS:

Read the article "Futuristic Farming" in the Winter 2019 issue of *FFA New Horizons* and complete the following activities.

What is Grant majoring in that helped him to acquire an internship with NASA?

1. Astronomy
2. Astrophysics

Grant is a part of the social media team working to promote which project?

- a. SpaceX Falcon 9
- b. Artemis Project
- c. Apollo Artemis 14



True False

Grant states in the article that FFA competitive events are what led him to pursue a career in space. (Circle the answer.)

What skills has Grant learned through FFA to help prepare him for his future? **Answers will vary.**

1. _____
2. _____
3. _____

Using AgExplorer, identify three careers Grant could have at NASA that utilize the skills he has learned in FFA.

Answers will vary.

1. _____
2. _____
3. _____

Part 2

DIRECTIONS:

Grant has used skills learned in FFA to land in a career area that is truly out of this world! Let's learn about the food science side of how astronauts eat during their space missions. Watch "Tasting Astronaut Food: Inside NASA's Space Food Systems Laboratory," <https://youtu.be/6vVle67Tfjc?t=245> (end at 9:55), and answer the following questions about food during space travel. If the video is unavailable, read the article "Food for Space Flight" from NASA, https://www.nasa.gov/audience/forstudents/postsecondary/features/F_Food_for_Space_Flight.html.

NASA uses packaging that promotes ease of use, product protection and freshness. For beverages, NASA purchases the packaging from which kid-favorite product?

- a. M&Ms
- b. Coca-Cola
- c. Capri Sun
- d. Juicy Juice

What method do food scientists use to prepare many solid foods for flight?

- a. Freezing
- b. Microwaving
- c. Boiling
- d. Freeze drying

Why can't foods go into space in their original packaging?

- a. Some packaging could be flammable
- b. Off-gassing from packaging
- c. Cost effectiveness
- d. All of the above



NAME: _____

Aligned to the following standards:
FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J;
FFA.CS-M; FFA.CS-N; CS.05; AG5; CCSS.SL.9-10.1; CCSS.SL.9-10.2; CRP.04; CRP.07; CRP.08; CRP.10

KEY — Appendix 3: How to Become a Chapter Officer

Created: Winter 2019 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "How to Become a Chapter Officer" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

1.

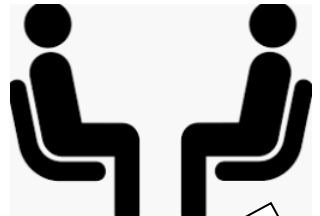
What is one piece of advice from the article that really stood out to you and why?

Answers will vary.



2. Based on what you read in the article, what advice would you give to a younger student or your friend regarding interviewing for an FFA chapter office position or other extracurricular activity or for a job?

Answers will vary.



3. Describe two ways you could apply all the tips in the article to your life:

Answers will vary.

4. The teachers who were interviewed have a combined total of how many years teaching?

C. 65
D. 71

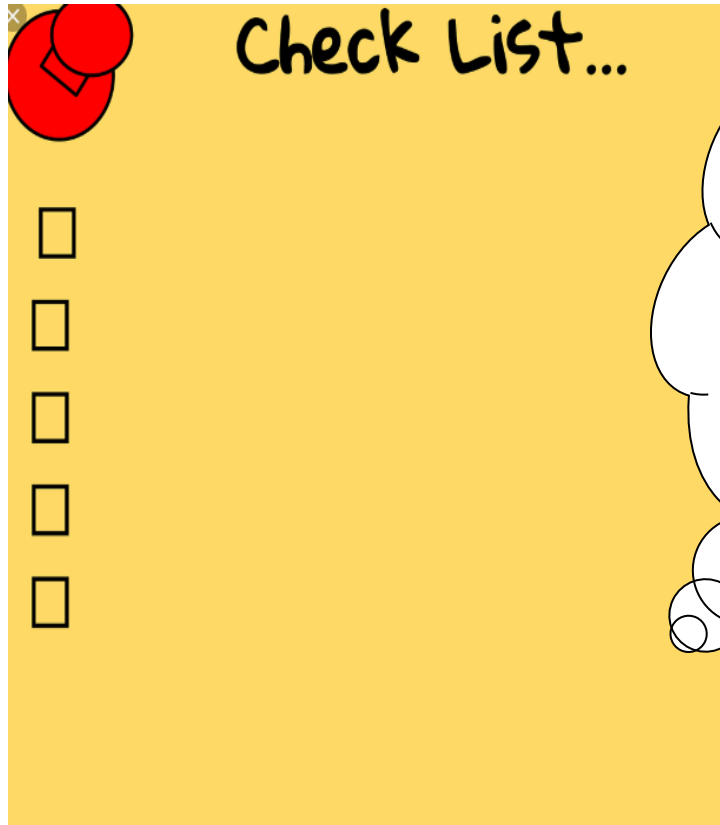
C. 75
D. 92

NAME: _____

KEY — Appendix 4: On the Record

How do you sign up to vote? Visit the website Rock the Vote (<https://www.rockthevote.org/voting-information/>) to learn more about voting policies and how to sign up to vote.

1. Click on the website link above, then on your state to learn about the specific voting policies. Identify those policies in the box below. *(Utilize the checklist below to record your state's voting policies. If there are not five policies, fill in the checklist as appropriate. If there are more than 5, add those at the bottom of the checklist.)* *Answers will vary.*



Do you think it is important to vote? Explain why or why not.
Answers will vary.

2. What information should you know in order to prepare to vote? (Tip: Click on the "Prepare to Vote" tab on the left side of the page after you have selected your state. Utilize this information to answer the question.)

May vary by state, but could include voter identification required, absentee ballot applications must be received 7 days before Election Day, etc.



3. What overall impact do you think voting has on our government and economy?

Answers may vary.

NAME: _____

Aligned to the following standards:

FFA.PL-A; FFA.PL-C; FFA.PL-E; FFA.PL-F; FFA.PG-I; FFA.PG-J;
FFA.CS-M; FFA.CS-N; CS.05; AG5; AGC09.02; CCSS.SL.9-10.1;
CCSS.SL.9-10.2; CRP.04; CRP.07; CRP.08; CRP.10

KEY — Appendix 5: Charting Her Path

Created: Winter 2019 by the National FFA Organization

DIRECTIONS:

Part 1

Read the article "Charting Her Path" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

2. Megan Nunes was a former _____ regional FFA officer.
- a. Ohio
 - b. New York
 - c. Tennessee
 - d. **California**



2. What type of farm did Megan grow up on?
- a. Cattle
 - b. Grain
 - c. **Dairy**
 - d. None of the above

3. What is Vinsight?

6. Where is Vinsight located?
- e. Chicago
 - f. New York
 - g. **San Francisco**
 - h. None of the above

Vinsight analyzes satellite imagery, weather trends and historical yield data to predict yields. The company services almonds and will have eight crops, including walnuts, strawberries and hops, in the next growing season.

4. What crop was Vinsight launched with?

- a. Grain
- b. Almonds
- c. **Grapes**
- d. None of the above



5. What is some advice that Megan gave?

7. How can you apply the advice Megan gave?
Answers will vary.

One piece of advice she gives is to not be afraid to explore other industries. Leaving agriculture actually led her to find the solutions she offers the industry today. She also says to not let gender bias influence your capabilities. She goes on to explain how she grew up in a family as one of four girls, and her parents told them they could do anything they wanted to. She says that gender doesn't play a role in her importance.

NAME: _____

Aligned to the following standards:

CS.02; FFA.PL-A; FFA.PL-E; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG2; CCSS.ELA.RI.9-10.4; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.1; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.07

Key — Appendix 6: Making a Global Impact

Created: Winter 2019 by the National FFA Organization

Part 1

DIRECTIONS:

Read the article "Global Impact" in the Winter 2019 issue of *FFA New Horizons* and answer the questions below.

1. What country did the FFA chapter decide to help?

Democratic Republic of Congo

2. Locate and color in this country on the map.

3. What animal does the country have a great dependence on?

Goats



Part 2

DIRECTIONS:

Using the Tractor Supply Company website (https://www.tractorsupply.com/know-how_pets-livestock_livestock-other_goat_goat-care-for-beginners-how-to-care-for-goats), explore the basics of goat care. If internet access is not available, ask your teacher for the Goat Information Sheet.

What does the term ruminant mean?

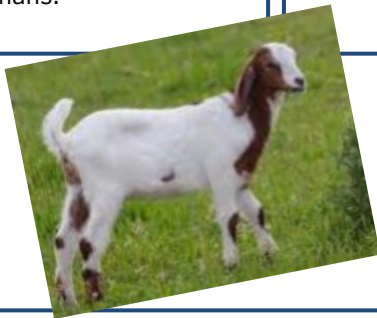
- a. The animal has four stomachs.
- ☒ b. The animal has a four-chambered stomach.
- c. The animal has a stomach like humans.

What does it mean if an animal is chewing its "cud"?

- a. The animal is eating.
- b. The animal is consuming salt.
- ☒ c. The animal is chewing regurgitated food.

Minerals are important for humans and goats. Goats should be given salt with trace amounts of selenium. Draw selenium's square as shown on the periodic table.

Atomic Number	34
Symbol	SE
Name	Selenium



☒ True or False
Cartoons show goats eating just about everything regardless of nutrition. Is this true or false?

Which of the following plants are considered poisonous and should not be consumed by a goat? Place a red X over the poisonous plants.



Collard Greens



Hemlock



Lilac



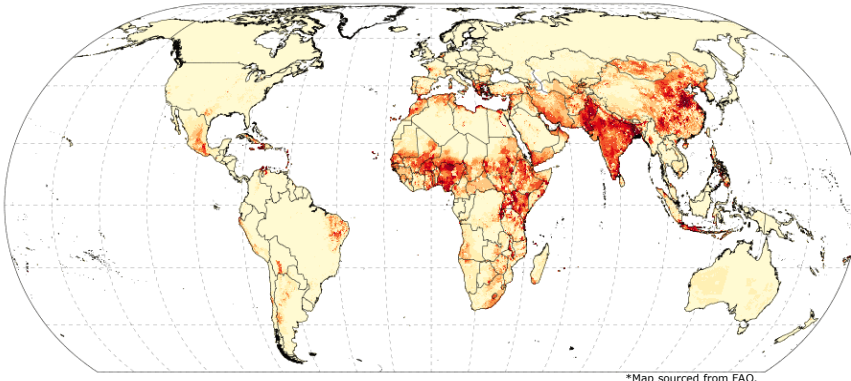
Azalea

NAME: _____

Part 3

DIRECTIONS:

Goats are incredibly important across the globe. Learn where goats are most commonly produced and why by completing the following activities.



The map to the left depicts the density of goats in a region. The darker the red the more goats present. Why do you think the goat density is so high in some areas? What about those areas may lead to more goats being raised? Goats are found in areas where animals that can survive on the available vegetation and withstand the environmental conditions are needed.

DIRECTIONS:

Goats are beneficial because they can provide milk, meat and fiber, depending on the breed. Using the [AgMRC website https://americangoatfederation.org/goat-products/](https://americangoatfederation.org/goat-products/), complete the following activities to learn about goat products. If you do not have internet access, ask your teacher for the Goat Information Sheet.

Goat Fiber

- What are the two main types of fiber acquired from goats?
 - Mohair
 - Cashmere
- Identify two products that can be made from the fiber of goats.

Answers will vary. Examples: socks, scarfs

Goat Milk

- Why is goat's milk considered to be so nutritional? Goats milk has a higher amount of fatty acids than milk from cows.
- Identify three products that can be produced from goat's milk.

Answers will vary. Examples: lotion, soap, cheese

Goat Meat

- What term is used to identify goat meat (40–60lb butcher weight)?

Chevon
- Goat meat is a great option for those that need to do what in their diet?

Reduce caloric intake

DIRECTIONS:

Develop a 30-minute radio segment to share with consumers how goat products affect their daily lives.

Answers will vary.

What is the economic impact of goats in the U.S.?

Answers will vary.

NAME: _____

Aligned to the following standards:

CS.02; FFA.PL-A; FFA.PL-E; FFA.PG-J; FFA.CS-M; FFA.CS-N; AG2; CCSS.ELA.RI.9-10.4; CCSS.ELA.W.9-10.2; CCSS.ELA.SL.9-10.1; CCSS.ELA.SL.9-10.2; CCSS.ELA.SL.9-10.4; MP1; MP5; MP6; CRP.02; CRP.04; CRP.07

Goat Information Sheet

DIRECTIONS:

Use the following information from Tractor Supply Company and the American Goat Federation to learn about caring for goats and the products we get from them.

Goat Care for Beginners: How to Care for Goats

Goats are ruminants, or mammals that digest roughage by chewing, partially digesting, regurgitating and then chewing it some more. When you hear people say that goats or cows are chewing "cud", they are actually chewing the partially-digested roughage that was previously swallowed.

Roughage for Goats

Because goats are ruminants, the majority of feed goats consume should be roughage. This includes "browse" such as shrubs and woody plants, and also forage, such as hay and pasture.

Roughage is not always enough to satisfy the nutritional needs of goats. Supplement your goats' forage diet with pelletized or coarse grain goat feed. Work with your veterinarian to develop a feeding plan for your goats to ensure they are getting the proper amount of nutrition.

There are several types of browse that are poisonous to goats. Care should be taken to eliminate access to enclosures that contain these plants:

Poisonous Plants to Goats

- Azaleas
- Hemlock
- Wild cherry
- Members of the laurel family
- Many others. Contact your county agricultural extension agency for a complete list of poisonous plants in your area.

When considering the quality of roughage for goats, a distinction should be made between "poor quality" roughage for cattle and "poor quality" roughage for goats. Goats are not able to digest the cell wall of plants because feed stays in the digestive tract for a shorter amount of time. Therefore, plants with thicker cell walls, such as straw, provide almost no nutritional value for goats but may be sufficient for cattle. Goats will eat various plants that are not palatable to cattle, such as leaves from trees and shrubs, and goats are known to eat almost anything regardless of its nutritional value.

Hay can be fed as a source of digestible fiber. To avoid waste, install a wall mounted hay rack in your goats' barn stall.

Livestock Supplements for Goats

Especially when roughage quality is poor, goats should be supplemented with quality supplements formulated specially for goats. This will ensure that goats' nutritional requirements are met. Generally, milk goats are fed more supplements than meat goats. It is easy to overfeed a goat which leads to obesity and a lowered rate of productivity. Commercial feeds specifically formulated for goats such as DuMor goat formula are recommended to help prevent obesity. Refer to livestock feed labels for specific goat feeding suggestions or visit your local Tractor Supply Co. store to get advice from an expert team member.

Minerals for Goats

Goats require several specific minerals for basic body function and optimum production. Goats should have access to trace mineral salt containing selenium at all times. A complete mineral supplement formulated especially for goats is also recommended during certain seasons when browse and forage may be sparse and during peak production levels. In addition, other minerals may be naturally deficient in your area, so it is a good idea to consult your local agricultural extension agency for specific mineral feeding suggestions. Goats are susceptible to Grass Tetany, although not to the same degree as cattle. Grass Tetany is caused by a deficiency in magnesium and occurs most frequently when goats are grazing lush pasture in the spring but can also occur in fall and winter. Offer a mineral supplement with higher levels of magnesium prior to exposing goats to lush pasture land.

NAME: _____

Water for Goats

Water needs in goats vary with seasonal changes, level of production and moisture content of forage. Because of the unpredictable fluctuation in water demand, goats should have access to an adequate supply of fresh water at all times.

Goat Feeding and Supplement Guide

Refer to the table below to figure out how much to feed your goat and what to feed goats:

Product	Unit Size	Feed Rate
Sheep & Goat Block	33-1/3 lb Block	1 Block per 12-15 head
Sheep & Goat Block	50 lb. Bag	1 lb. per head per month
4% All Stock Block	50 lb. Bag	1-2 lbs. per head per month
16% Sheep & Goat Tub	100 lb. Tub	_____
Dried Molasses	50 lb. Bag	_____

Creep Feeding Goats

Creep Feeding refers to feed provided to goat kids, or baby goats, in an area specifically designed to prevent adult goats from consuming the feed. Creep feed is a way of supplementing a goat mother's milk and pasture feed. Creep feeding is known to help goat kids develop healthier immune systems and increased weaning weights.

Q and A: Answers to the Most Frequently Asked Questions about Goat Care

- Q. Where can I find the most accurate and up-to-date information about goat feed offered at Tractor Supply Co.?
- A. Everything you need to select the right kind of goat feed can be found on feed labels.
- Q. What should I feed my goat?
- A. Goats are ruminant animals, which is a term that refers to any animal with a multi-chambered stomach. Goats are primarily "browsers", which means they pick and choose between a wide variety of weeds, shrubs, woody plants and even briars. However, most goats will need nutritional supplements in addition to forage. This includes pasture, hay and concentrates.
- Q. How much should I feed my goat?
- A. Nutritional requirements of goats can vary depending on life stage, activity level, pregnancy, lactation and breed. Increased production demands will also cause an increase in nutritional demands. Because of this wide range of nutritional needs, when feeding supplement concentrates or grains, read the label on goat feed bags for suggested feeding quantities. Consult a veterinarian who is familiar with your goat's breed and the quality of forage in your area. Also consider that meat production goats have different nutritional needs than milk production goats. Care should be taken to avoid feeding goats too much. Obese animals have lower reproduction rates and are subject to arthritis.
- Q. What is urea, and can I feed it to my goat?
- A. Urea is a non-protein source of nitrogen commonly used for ruminants due to convenience, availability and low cost. Micro-organisms in the goat's rumen, or part of the goat's large intestine, use urea to produce protein. The protein is then digested and absorbed by the goat's body. Goats can digest urea, but it is highly unpalatable to them. As a result, they may actually avoid feed or supplements that contain urea.

Other Supplies You May Need While Caring for Goats

- Submersible tank heater (for livestock tanks)
- Plastic 5 gallon bucket
- 4-quart galvanized feed scoop
- White salt (sodium chloride) 50 lb. block
- White salt 4 lb. brick
- Trace mineral salt 50 lb. block
- Trace mineral salt 4 lb. brick
- Sheep and goat mineral 50 lb. bag
- Sheep and goat protein block
- 16% sheep and goat tub 100 lb. tub
- Goat drench
- Goat fly spray
- Goat bunk feeder
- Mesh gates
- Goat watering tanks

NAME: _____

Goat Dairy Products

Dairy goat milk can be used for a multitude of useful products. Goat milk is an excellent source of nutrition, as is goat cheese. Goat milk can be used to make soaps and lotions that are beneficial in as much as they don't contain a lot of chemicals.

Nutritious Goat Milk

Whole cows' milk is about 17% fatty acids. Goats' milk averages 35% fatty acids, making it more nutritionally wholesome.

Up to 50% of people who are lactose intolerant to cows' milk find that they can easily digest goats' milk.



HOW TO MAKE GOAT MILK SOAP

Goat Fiber Products

The two most common fibers produced from goats are mohair and cashmere. Angora goats produce mohair. Cashmere is a type of fiber, not a breed and goats are selected for the fiber they produce.



NAME: _____

Goat Meat Products

Cabrito is meat from very young, milk fed goats between 4 and 8 weeks of age.

Chevon may be goat from 48 to 60 pounds and 6 to 9 months of age.

Capretto is the Italian term "kid goat."

Whatever you call it, goat meat, when prepared properly, is delicious.

For centuries goat meat has been enjoyed throughout the Middle East, Asia and in many European countries. In fact, it is one of the most commonly consumed meats in the world. Goat is the meat of choice in some countries and is utilized in many dishes of Spanish, Middle East and Greek origin. In the United States goat meat consumption has been historically low compared to other countries. During recent years; however, with the increase in the Hispanic and Far Eastern populations, consumption of goat meat in the United States has grown to the point where we now import over 50% of the goat eaten here. In addition, Americans are beginning to appreciate the healthy nature of goat meat.

Goat meat is approximately the equivalent in caloric value to chicken and has less than half the calories of beef and pork per serving. This is desirable for persons with a need to reduce their caloric intake.

Based on 3oz of Cooked Meat	Calories	Fat	Saturated Fat	Protein	Iron	Cholesterol
GOAT	122 <i>LOW</i>	2.58 <i>LOWEST</i>	0.79 <i>LOWEST</i>	23 <i>HIGH</i>	3.3 <i>HIGHEST</i>	63.3 <i>LOWEST</i>
BEEF	245	16	6.8	23	2.9	73.1
PORK	310	24	8.7	21	2.7	73.1
LAMB	235	16	7.3	22	1.4	78.2
CHICKEN	120	3.5	1.1	21	1.5	76

Information from USDA Database for Standard Reference Release 14 (July 2001)

Today's goat meat is prepared in many ways following diverse recipes with many different added ingredients. Ground goat can also be easily substituted for ground beef in most dishes. However, the authentic cooking practices are either baked or barbecued (asado) or stewed (guisado) with traditional cumin, garlic and chili pepper spices. Fresh goat meat should be removed from the market wrapping paper and re-wrapped, unless the meat is to be used the same day it is purchased. Fresh meat should be frozen if it is to be kept for three days or more and should be placed in the coldest part of a refrigerator or in the meat compartment. Goat meat which has been properly wrapped and promptly frozen at 0°F or lower can be kept for 6 to 9 months. Cooked goat meat should also be chilled rapidly, covered and stored in the coldest part of the refrigerator.



Goat meat will lose moisture and can toughen quickly due to low fat content if it is exposed to high, dry cooking temperatures. Therefore, two basic rules are: 1) cook it slowly (low temperature) and 2) cook it with moisture. Tender cuts of meat are usually best when cooked by a dry heat method such as roasting, broiling or frying. Less tender cuts are tenderized by cooking with moist heat such as braising and stewing.

Tender cuts of goat meat are the legs, ribs, portions of the shoulder cut, the loin roast and the breast. Less tender cuts of meat are stew meat, riblets and shanks. Cooking any meat at low temperatures results in a more tender and flavorful product with more juice.

GOAT MEAT RECIPES

