



FFA Blue 365: Lesson 9

The Value Chain

Created: 03/2020 by the National FFA Organization

The FFA Blue 365 lesson series is intended to bring innovative technology, science, research and entrepreneurship to the classroom. These lessons are designed to highlight the innovations and technologies transforming agriculture.

STUDENT LEARNING OBJECTIVES:

After completing these activities, students will ...

1. Describe the Agriculture, Food and Natural Resources (AFNR) Value Chain.
2. Identify key stakeholders involved in the AFNR Value Chain.
3. Analyze opportunities to strengthen sustainability in the AFNR Value Chain.
4. Design an innovative solution to a challenge facing the AFNR Value Chain.

TIME REQUIRED: 90 minutes

RESOURCES:

1. Video: "Food Chain Partnership: Trends in Modern Agriculture" (Bayer Crop Science, 2017), <https://www.youtube.com/watch?v=SdmWSOC4TrM>
2. Video: "The Agricultural Value Chain" (Colorado State University, 2017), <https://youtu.be/oBGH71vqgXU>
3. Video: "Five Amazing RENEWABLE ENERGY Ideas and Solutions for the Future" (Cool Gadgets and Stuff, 2018), <https://www.youtube.com/watch?v=FkA4Mhhjz40>
4. Video: "FFA Blue 365: Myths and Misconceptions of Pesticide Safety" by Reza Rasoulpour (2018), <https://vimeo.com/314344941>.
5. Video: "FFA Blue 365: Saving Water, Fuel, Labor and Time" by Rick Ekins" (2018), <https://vimeo.com/314082126>
6. Website: "Supply and Demand, Markets and Prices" (The Library of Economics and Liberty, n.d.), <https://www.econlib.org/library/Topics/College/supplyanddemand.html>
7. Website: "Economic Systems" (The Library of Economics and Liberty, n.d.), <https://www.econlib.org/library/Topics/HighSchool/EconomicSystems.html>
8. Website: "Five Common Factors Influencing Consumer Behavior" (iResearch Services, 2018), <https://www.iresearchservices.com/5-common-factors-influencing-consumer-behavior/>
9. Website: "Food Chain Partnership" (Bayer Crop Science, 2017), <https://www.foodchainpartnership.cropsscience.bayer.com>
10. Website: "Food Value Chains" (United States Department of Agriculture, Agricultural Marketing Service, 2014), <https://ffa.box.com/s/y6nkwouskl0z48fqmj2vu5e6s5187dxe>
11. Website: "Value Chain Strategy Design: A Tool for Planning" (Market Link, 2012), <http://www.marketlinks.org/library/value-chain-strategy-design-tool-planning>
12. Website: "Billions in Change" (Billions in Change, 2019), <https://billionsinchange.com>
13. Website: "Agriscience Fair," (National FFA Organization, 2018), [FFA.org/participate/awards/agriscience-fair/](https://ffa.org/participate/awards/agriscience-fair/)
14. Website: AgExplorer (AgExplorer, 2018), AgExplorer.ffa.org
15. Website: "Living to Serve Grants" (National FFA Organization, 2019), [FFA.org/livingtoserve/grants/](https://ffa.org/livingtoserve/grants/)
16. Website: "Agriculture, Food and Natural Resources Value Chain" (National FFA, 2020), [FFA.org/value-chain/](https://ffa.org/value-chain/)
17. Website: "Service Planning Guide" (National FFA Organization, 2019), <https://ffa.app.box.com/s/9969na39x2qdvy70olfadu3dj1uxae6m>
18. Website: Agricultural Marketed Research Center (AMRC, 2020), agmrc.org/business-development/valueadded-agriculture
19. Infographic generation tools:
 - a. Piktochart (2018), <https://piktochart.com/formats/infographics/>
 - b. Canva (2018), <https://www.canva.com>

EQUIPMENT AND SUPPLIES NEEDED:

1. Internet access to play the videos in real time or embed them in a PowerPoint
2. A copy of the "Role of Consumers in the Market" worksheet for each student
3. A copy of the "Importance of the Food Value Chain" worksheet for each student
4. A copy of the "Introduction to the Agriculture, Food and Natural Resources Value Chain" worksheet for each student
5. A copy of the "Stakeholders in the AFNR Value Chain" worksheet for each student
6. A copy of the "Innovations in the AFNR Value Chain" worksheet for each student
7. A copy of the "Securing Innovative Ideas in the AFNR Value Chain" worksheet for each student
8. Colored pens or markers
9. Blank paper

THIS QUICK LESSON PLAN WOULD WORK WELL AS AN:

1. Introduction to critical issues in agriculture.
2. Introduction to innovations in agriculture.
3. Introduction to technology in agriculture.
4. Introduction to agribusiness systems.

STUDENT ACTIVITY SHEETS

<https://ffa.box.com/s/qfmmk607tdrtgh6qvp79qvw1x5o4apdk> (Word)

<https://ffa.box.com/s/4mq33ycrlwnyiwyi5in72g9zdmabjy8> (PDF)

THESE ACTIVITIES ARE ALIGNED TO THE FOLLOWING STANDARDS:

AFNR Performance Element

- CS.01. Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster
- CS.02. Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.
- CS.05. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.
- CS.06. Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.

FFA Precept

- FFA.PL-A.Action. Assume responsibility and take the necessary steps to achieve the desired results, no matter what the goal or task at hand.
- FFA.PL-C.Vision. Visualize the future and how to get there.
- FFA.PL-E.Awareness. Understand personal vision, mission and goals.
- FFA.CS-M.Communication. Effectively interact with others in personal and professional settings.
- FFA.CS-N.Decision Making. Analyze a situation and execute an appropriate course of action.

Common Career Technical Core

- AG1. Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.
- AG2. Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food, and natural resources (AFNR) in society and the economy.
- AG3. Examine and summarize the importance of health, safety, and environmental management systems in AFNR businesses.
- AG5. Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources Career Pathways.
- AG6. Analyze the interaction among AFNR systems in the production, processing, and management of food, fiber, and fuel and the sustainable use of natural resources.

NASDCTEc

- AGC05.02. Identify how key organizational systems affect organizational performance and the quality of products and services to demonstrate an understanding of how AFNR systems are managed and improved.
- AGC09.02. Select, research and examine critical aspects of career opportunities in one or more AFNR career pathways in order to gain an understanding of the breadth of occupations within this cluster.
- AGC10.03. Compare and contrast issues affecting the AFNR industry including biotechnology, employment, safety, environmental and animal welfare to demonstrate an understanding of the trends and issues important to careers in this industry.

Common Core – Reading: Informational Text

- CCSS.ELA-Literacy.RI.9-10.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- CCSS.ELA-Literacy.RI.9-10.2. Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- CCSS.ELA-Literacy.RI.9-10.4. Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language of a court opinion differs from that of a newspaper).

Common Core – Writing

- CCSS.ELA-Literacy.W.9-10.2. Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

Common Core – Speaking and Listening

- CCSS.ELA-Literacy.SL.9-10.1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9-10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
- CCSS.ELA-Literacy.SL.9-10.2. Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.
- CCSS.ELA-Literacy.SL.9-10.4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

Common Core – Science & Technical Subjects

- CCSS.ELA-Literacy.RST.9-10.1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
- CCSS.ELA-Literacy.RST.9-10.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.
- CCSS.ELA-Literacy.RST.9-10.8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.

Common Core – Literacy in Science & Technical Subjects: Writing

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

Next Generation Science

- HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

Green/Sustainability Knowledge and Skill Statements

- AFNR Career Cluster, Statement 2. Analyze community practice or policy development related to sustainability in AFNR.
- AFNR Career Cluster, Statement 7. Demonstrate an understanding of green and sustainability trends that are impacting processes and markets in AFNR.

AFNR Career Ready Practices

- CRP.04. Communicate clearly, effectively, and with reason. Career-ready individuals communicate thoughts, ideas and action plans with clarity, whether using written, verbal and/or visual methods.
- CRP.05. Consider the environmental, social and economic impact of decisions. Career-ready individuals understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organizations and the environment.
- CRP.06. Demonstrate creativity and innovation. Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization.
- CRP.07. Employ valid and reliable research strategies. Career-ready individuals are discerning in accepting and using new information to make decisions, change practices or inform strategies.
- CRP.08. Utilize critical thinking to make sense of problems and persevere in solving them. Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem.

Partnership for 21st Century Skills

- Communication
- Critical Thinking and Problem Solving
- Information, Communications, and Technology Literacy
- Initiative and Self-Direction
- Think Creatively

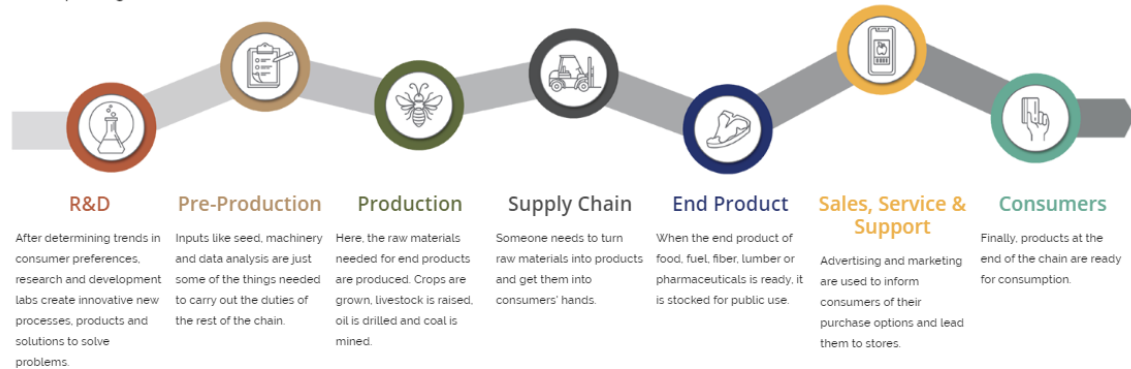
LESSON PLAN:

1. **Bell Ringer:** In a free market, Agriculture, Food and Natural Resources (AFNR) systems are driven by consumer demands. Consumer demands are shaped by several factors.
 - a. Grasping how consumers influence the markets begins with understanding consumer purchasing power and motivations for buying agricultural products in a capitalist economy.
 - i. Hand out the "Role of Consumers in the Market" worksheet, and encourage students to brainstorm the different ways consumers influence products on the shelf.
 1. Questions included in the worksheet:
 - a. Visit the "Supply and Demand," "Markets and Prices" and "Economic Systems" webpages by The Library of Economics and Liberty (n.d.) website and define the following economic terms — capitalism, supply, demand, equilibrium prices and market-clearing price.
 - b. Based on what you learned from these definitions, explain the role of a consumer in a capitalist economy.
 - c. What is the role of a consumer in supply and demand?
 - d. Visit the "Five Common Factors Influencing Consumer Behavior" by iResearch Services (2018) website, available at <https://www.iresearchservices.com/5-common-factors-influencing-consumer-behavior/>.
 - e. Define each of the factors pertaining to the purchasing patterns of consumers in a free market — marketing campaigns, economic campaigns, personal preferences, group influence and purchasing power.
 - f. What is a consumer's role in each of these steps?
 - ii. As a class, discuss the consumer's role in free markets.
2. **Introduction:** In addition to consumer purchasing power, technology also drives what and how agricultural items are produced.
 - a. Personal health, sustainability and nutrition play key roles in driving Agriculture, Food and Natural Resources systems. Economics, governmental regulations and policies, environment and demographics also influence the market. Nevertheless, the food value chain supports the transportation of goods from the producer to the consumer.
 - i. Watch Bayer Crop Science's (2017) video "Food Chain Partnership: Trends in Modern Agriculture," available at <https://www.youtube.com/watch?v=SdmWSOC4TrM>.
 1. *Optional:* If YouTube is not available, have students visit Bayer Crop Science's (2017) Food Chain Partnership website, <https://www.foodchainpartnership.cropscience.bayer.com>.
 - ii. Have students complete the "Importance of the Food Value Chain" worksheet and discuss.
 1. Questions included in the worksheet:
 - a. What is the definition of "value added"? What does the process of "adding value" to a product entail?
 - b. Compare and contrast commodities and products. Why do we "add value" to raw commodities?
 - c. Adding value to products can be accomplished in a few ways, but generally falls into one of two main types. What are those types?
3. **Part 1: Basics of the Agriculture, Food and Natural Resources (AFNR) Value Chain**
 - a. The agricultural food chain engages several players from production to the consumer.
 - i. For a brief overview, study the National FFA Organization's "Agriculture, Food and Natural Resources Value Chain" (2019) diagram.

1. Compare the value chain example with key terms and definitions provided by the Agricultural Marketed Resource Center (AMRC) website (<https://www.agmrc.org/>)

Agriculture, Food and Natural Resources Value Chain

As in any industry, consumers and technology drive what and how things are produced. Right now, personal health, sustainability and nutrition are significant drivers affecting agriculture, food and natural resources, but there are other market factors constantly weighing on these industries as well, including economics, governmental policies, the environment, ad demographics and more. Meanwhile, innovation makes involvement in these industries ever-expanding.



2. Complete the "Introduction to the Agriculture, Food and Natural Resources Value Chain" worksheet.
 - a. Questions included in the worksheet:
 - i. To best understand value chains, it is helpful to outline how products move from production to consumer in other contexts. For example, consider the steps it would take to send a birthday card to a family member who lives in a different state. As you read each step, refer to the Agriculture, Food and Natural Resources (AFNR) Value Chain diagram shown above.
 - ii. Using the birthday card example, think through the value chain steps it will take to submit an award application to your state FFA association. List the key players and questions you must consider to get an award application from your thoughts to your state association's mailbox. Refer to the steps in the AFNR Value Chain for ideas.
 - iii. Review the definitions for each of the seven sectors in the AFNR Value Chain diagram. In your own words, label and describe each step.
 - iv. Select one of the steps in the food value chain. Visit AgExplorer.ffa.org, browse through the different career focus areas and list three different careers that could relate to your selected step.
3. Have students discuss responses with the class. If time permits, allow them to post their responses on the white board or on a poster.

4. Part 2: Stakeholders in the AFNR Value Chain

- a. The agricultural value chain is complex. Investigating the complexities of each value chain entity provides more thorough insight to the movement and sustainability of products.
 - i. Several resources are available online to gain a deeper understanding of the different stakeholders in the AFNR Value Chain.
 1. Example, United States Department of Agriculture, Agricultural Marketing Service manual on Food Value Chains (<https://FFA.box.com/s/y6nkwouskl0z48fqmj2vu5e6s5187dxe>) or Market Link's (2012) "Value Chain Strategy Design: A Tool for Planning" website, available at <http://www.marketlinks.org/library/value-chain-strategy-design-tool-planning>.
 2. Using the "Stakeholders in the AFNR Value Chain" worksheet, have students research one of the elements of the AFNR Value Chain.
 - a. Questions included in the worksheet:
 - i. Review the National FFA Organization's Agriculture, Food and Natural Resources Value Chain (2019) diagram on the "Introduction to the Agriculture, Food and Natural Resources Value Chain" worksheet. Select one of the steps in the value chain that is of interest to you.
 - ii. Research your AFNR Value Chain step. Diagram the key functions that make your step operate. Provide as much detail as possible. Feel free to find your own credible resources to guide your diagram.
 - iii. Who are the key stakeholders involved in the selected step? Define their role in the process.
 - iv. What are some of the strengths of this step? What are some of the key

challenges of this step?

3. If time permits, allow students to present their stage in the AFNR Value Chain to the class.

5. Part 3: Innovation in the AFNR Value Chain

- a. In the AFNR Value Chain there are numerous opportunities for innovation.
 - i. Applying creativity and innovative ideas to the AFNR supply chain secures the possibility of sustainability in the industry.
 1. Watch Cool Gadgets and Stuff's (2018) "Five Amazing RENEWABLE ENERGY Ideas and Solutions for the Future" video, available at <https://www.youtube.com/watch?v=FkA4Mhhjz40>.
 - a. If time is a constraint, encourage students to watch one or two of the ideas before continuing (i.e., the first Graphene invention ends at 2:51).
 - b. *Optional:* If YouTube is not available, have students visit the Billions in Change (2019) website, available at <https://billionsinchange.com>.
 2. Have students get into groups of two or three.
 3. Using the "Innovations in the AFNR Value Chain" worksheet, have students determine a model for a new innovation to add to or support the AFNR Value Chain.
 - a. Questions included in the worksheet:
 - i. Using the four stages of innovation, describe a new, innovative solution (a product, method, technology, etc.) to address its function or need in the AFNR Value Chain.
 - ii. Using the four stages of innovation diagram, design and illustrate the new, innovative solution (a product, method, technology, etc.).
 - iii. Diagram of the innovation/product (provide labels and descriptions).
 - iv. Describe its projected role in the AFNR Value Chain.
 - v. Provide the projected cost of the innovation/product.
 4. Allow five to 10 minutes for each group to share their innovation with the class.

6. Follow-up: Following each presentation, have students complete a takeaway page from each innovation. Encourage students to think critically about how they interpret their peers' innovation presentation(s).

- a. Complete the "Securing Innovative Ideas in the AFNR Value Chain" worksheet.
 - i. Questions included in the worksheet:
 1. What is the background or the need for the innovation?
 2. What is the impact of the innovation?
 3. What are the risks associated with the innovation?

7. Leveling Up:

- a. "Agriscience Fair Project":
 - i. Read the overview and rules for the National FFA Agriscience Fair at [FFA.org/participate/awards/agriscience-fair/](https://www.ffa.org/participate/awards/agriscience-fair/).
 - ii. Identify a need within one of the six agriscience fair categories: animal systems; environmental service/natural resource systems; food products and processing systems; plant systems; power, structural and technical systems; and social science.
 - iii. Using the key elements of the AFNR Value Chain as a framework, the National FFA Agriscience Fair handbook and online resources, prepare an agriscience fair project to investigate the identified need.
- b. "Art Gallery" or "Public Campaign Display":
 - i. Invite other teachers or community members to share ideas for innovative ideas in the AFNR Value Chain in schools and communities.
 - ii. Connect with existing school events to get others involved. For example, post art projects in the lobby of the school during sporting events or invite presentations on each campaign during FFA chapter or alumni meetings.
- c. "Careers Guest Speaker":
 - i. Identify what types of careers can relate to the value chain. What types of careers support these stakeholders?
 1. Visit AgExplorer ([AgExplorer.ffa.org](https://www.agexplorer.ffa.org)) and review the career focus areas for ideas of types of careers to choose from.
 - ii. As a class, select someone from the community who has a career that contributes to the value chain through agriculture. Ask the individual to speak to the class to share details about his or her career.
 1. It might be helpful to refer this task to a class committee to select a speaker.
 - iii. Encourage students to research the speaker's bio and business/company/school and prepare two to three questions for the speaker prior to his or her arrival.
- d. "Agricultural Value Chain" Symposium:
 - i. Have groups of students prepare various presentations on AFNR Value Chain issues.
 - ii. Prepare a symposium displaying various issues to share with the rest of the school and/or with a

- neighboring elementary or middle school.
- e. "Four Stages of Innovation" Model:
 - i. Using the "Blue 365: Four Stages of Innovation" lesson plan, have students apply the four stages of innovation model to one value chain issue.
 - ii. In what ways could the four stages help raise awareness of the issue?
 - f. "Living to Serve" platform:
 - i. Encourage students to look through available grants for service plans related to safety. See links below:
 1. Living to Serve Grants from National FFA: FFA.org/livingtoserve/grants/
 2. Planning Guide: <https://FFA.app.box.com/s/9969na39x2qdv70olfadu3dj1uxae6m>
 - g. "School or Community Service" Project:
 - i. Identify a need on the school campus or in the community related to improving safety protocol.
 - ii. Organize a community or school drive to help address that need in the local community.
 - h. "Ted Talk" Oral Presentations:
 - i. Watch the "Blue 365" (2018) video from Reza Rasoulpour, Leader of Global Regulatory for Corteva, on "Myths and Misconceptions of Pesticide Safety," available at <https://vimeo.com/314344941>.
 - ii. Watch the "Blue 365" (2018) video from Rick Ekins with FMC on "Saving Water, Fuel, Labor and Time," available at <https://vimeo.com/314082126>.
 1. Select one video to watch.
 2. Using techniques and points from the selected speaker, develop a 12- to 15-minute Ted Talk-style oral presentation to deliver to the class about an issue related to safety and/or improving lives.
 - a. If possible, set the classroom up around a center stage to allow students to speak as if they were giving a real Ted Talk.
 - i. "Written Report":
 - i. Watch the "Blue 365" (2018) video from Reza Rasoulpour, Leader of Global Regulatory for Corteva, on "Myths and Misconceptions of Pesticide Safety," available at <https://vimeo.com/314344941>.
 - ii. Watch the "Blue 365" (2018) video from Rick Ekins with FMC on "Saving Water, Fuel, Labor and Time," available at <https://vimeo.com/314082126>.
 1. Select one video to watch.
 2. Using techniques and points from the selected speaker, prepare an eight- to 10-page written report analyzing opportunities to improve lives through the AFNR Value Chain. Students should be sure to highlight the following:
 - a. What elements do they discuss in their presentation that highlights how the agriculture industry is improving lives through the value chain?
 - b. What challenges does the agriculture industry face from a supply chain perspective?
 - c. What can be done to help improve lives using the AFNR Value Chain in the future?
- 8. Exit Ticket:** Challenge students to think about the food they can buy at a grocery store.
- a. With a partner, discuss what steps each product had to go through to get to the shelf. What might make the food chain more sustainable for your selected product?

Aligned to the following standards:
CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6; AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1; CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

NAME: _____

Role of Consumers in the Market

DIRECTIONS:

In a free market, Agriculture, Food and Natural Resources (AFNR) systems are driven by consumer demands. Consumer demands are shaped by several factors. Grasping how consumers influence the markets begins with understanding consumer purchasing power and motivations for buying agricultural products in a capitalist economy.

Complete the following:

- Visit the "Supply and Demand" and "Markets and Prices" webpages by The Library of Economics and Liberty (n.d.), available at <https://www.econlib.org/library/Topics/College/supplyanddemand.html> and "Economic Systems" by The Library of Economics and Liberty (n.d.), available at <https://www.econlib.org/library/Topics/HighSchool/EconomicSystems.html>.
- Visit the "Five Common Factors Influencing Consumer Behavior" by iResearch Services (2018) website, available at <https://www.iresearchservices.com/5-common-factors-influencing-consumer-behavior/>.
- Record your responses below.

Visit the "Supply and Demand," "Markets and Prices" and "Economic Systems" webpages (links listed above) and define the following economic terms:

Capitalism	Supply	Demand	Equilibrium Prices	Market-Clearing Price

Based on what you learned from these definitions, explain the role of a consumer in a capitalist economy.

What is the role of a consumer in supply and demand?

Visit the “Five Common Factors Influencing Consumer Behavior” by the iResearch Services (2018) website, available at <https://www.iresearchservices.com/5-common-factors-influencing-consumer-behavior/>.

Define each of the factors pertaining to the purchasing patterns of consumers in a free market.



Marketing Campaigns



Economic Campaigns



Personal Preferences



Group Influence



Purchasing Power

What is a consumer's role in each of these steps?

NAME: _____

Aligned to the following standards:
CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6;
AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1;
CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1;
CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8;
CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

Importance of the Food Value Chain

DIRECTIONS:

In addition to consumer purchasing power, technology also drives what and how agricultural items are produced. Personal health, sustainability and nutrition play key roles in driving Agriculture, Food and Natural Resources (AFNR) systems. Economics, governmental regulations and policies, environment and demographics also influence the market. Even still, the food value chain supports the transportation of goods from the producer to the consumer.

Complete the following:

20. Watch Bayer Crop Science's (2017) video "Food Chain Partnership: Trends in Modern Agriculture," available at <https://www.youtube.com/watch?v=SdmWSOC4TrM>.
 - a. Optional: If YouTube is not available, browse the Bayer Crop Science's (2017) Food Chain Partnership website, available at <https://www.foodchainpartnership.cropsscience.bayer.com>.
- Visit the Agricultural Marketed Resource Center (AMRC) website at <https://www.agmrc.org/value-added-agriculture/what-is-value-added-agriculture>.
- Using the Agricultural Marketed Resource Center (AMRC) website as a guide, record your responses below.



1) What is the definition of "value added"? What does the process of "adding value" to a product entail?



2) Compare and contrast commodities and products. Why do we "add value" to raw commodities?

NAME: _____

Aligned to the following standards:

CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N;
AG1; AG2; AG3; AG5; AG6; AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1; CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

Introduction to the Agriculture, Food and Natural Resources Value Chain

DIRECTIONS:

The agricultural food chain engages several players from production to the consumer.

Complete the following:

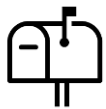
- Review the National FFA Organization's "Agriculture, Food and Natural Resources Value Chain" diagram, and record your responses below.
 - If needed, use the Agricultural Marketed Resource Center (AMRC) website as an additional resource (<https://www.agmrc.org>).

Agriculture, Food and Natural Resources Value Chain

As in any industry, consumers and technology drive what and how things are produced. Right now, personal health, sustainability and nutrition are significant drivers affecting agriculture, food and natural resources, but there are other market factors constantly weighing on these industries as well, including economics, governmental policies, the environment, ad demographics and more. Meanwhile, innovation makes involvement in these industries ever-expanding.



To best understand value chains, it is helpful to outline how products move from production to consumer in other contexts. For example, consider the steps it would take to send a birthday card to a family member who lives in a different state. As you read each step, refer to the Agriculture, Food and Natural Resources Value Chain diagram shown above.



- 1) R&D: What type of card should you buy? What does your family member like? Is there a particular design that would appeal to him or her?
- 2) Pre-Production: How would the card get to the shelf? How would you travel to the store to get the card?
- 3) Production: What message will you write? What size stamp would it take?
- 4) Supply Chain: How will the letter get to your family member? How will you get it in the mail?
- 5) End Product: Once the letter gets to the postal service, who are the end-product players?
- 6) Sales, Service and Support: How will the mailperson get the letter to their mailbox?
- 7) Consumers: Once your family member gets the card, what will his or her reaction be?

Using the birthday card example above, think through the value chain steps it will take to submit an award application to your state FFA association. List the key players and questions you must consider to get an award application from your thoughts to your state association's mailbox. Refer to the steps in the Agriculture, Food and Natural Resources Value Chain for ideas.

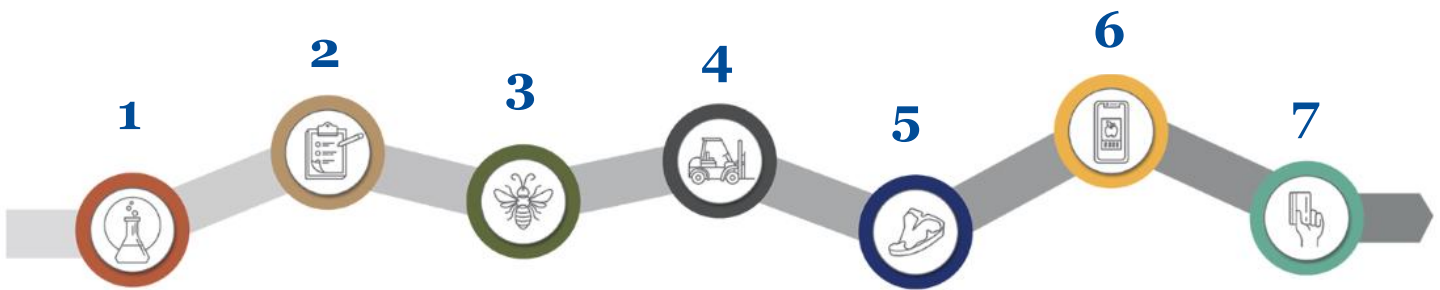
Award application name:

1) R&D:



- 2) **Pre-Production:**
- 3) **Production:**
- 4) **Supply Chain:**
- 5) **End Product:**
- 6) **Sales, Service and Support:**
- 7) **Consumers:**

Review the definitions for each of the seven sectors in the Agriculture, Food and Natural Resources Value Chain diagram. In your own words, label and describe each step:



1)

5)

2)

6)

3)

7)

4)

Select one of the steps in the food value chain. Visit AgExplorer.ffa.org, browse through the different career focus areas and list three different careers that could relate to your selected step:

Career Option 1:

Career Option 2:

Career Option 3:

NAME: _____

Stakeholders in the AFNR Value Chain

Aligned to the following standards:

CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6; AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1; CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

DIRECTIONS:

The agricultural value chain is complex. Investigating the complexities of each value chain entity provides more thorough insight to the movement and sustainability of products. Several resources are available online to gain a deeper understanding of the different stakeholders in the AFNR Value Chain.

Complete the following:

- Learn more about the AFNR Value Chain using resources similar to, but not limited to, the following:
 - a. United States Department of Agriculture, Agricultural Marketing Service manual on "Food Value Chains," available at <https://FFA.box.com/s/y6nkwouskl0z48fqmj2vu5e6s5187dxe>.
 - b. Market Link's "Value Chain Strategy Design: A Tool for Planning" website, available at <http://www.marketlinks.org/library/value-chain-strategy-design-tool-planning>.
 - c. National FFA Organization's "Agriculture, Food and Natural Resources Value Chain," available at FFA.org/value-chain/.
- Review the National FFA Organization's Agriculture, Food and Natural Resources Value Chain diagram on the "Introduction to the Agriculture, Food and Natural Resources Value Chain" worksheet. **Select one of the steps** in the value chain that is of interest to you. Analyze your selected step and answer the following questions.

Selected AFNR Value Chain Step: _____



Research your AFNR Value Chain step. Diagram the key functions that make your step operate. Provide as much detail as possible. Feel free to find your own credible resources to guide your diagram.



Who are the key stakeholders involved in the selected step? Define their role in the process.



What are some of the strengths of this step? What are some of the key challenges of this step?

NAME: _____

Innovations in the AFNR Value Chain

Aligned to the following standards:
CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6; AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1; CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

DIRECTIONS:

In the AFNR Value Chain there are numerous opportunities for innovation. Applying creativity and innovative ideas to the AFNR supply chain secures the possibility of sustainability in the industry.

Complete the following:

- Watch Cool Gadgets and Stuff's "Five Amazing RENEWABLE ENERGY Ideas and Solutions for the Future" video, available at <https://www.youtube.com/watch?v=FkA4Mhhjz40>.
 - a. If time is a constraint, watch one or two of the ideas before continuing (i.e., the first Graphene invention ends at 2:51).
 - b. *Optional:* If YouTube is not available, visit the Billions in Change website, available at <https://billionsinchange.com>.
- Determine a model for a new innovation to add to or support the AFNR Value Chain.

Using the four stages of innovation, describe a new, innovative solution (a product, method, technology, etc.) to address its function or need in the AFNR Value Chain.

Innovation Name: _____

Research & External Innovation	<i>Identify ideas, products or technologies to address a global issue.</i>
Early Development	<i>Describe the specific need it addresses and how it will maintain safety, efficiency and effectiveness.</i>
Late Development	<i>Describe studies that can be conducted to ensure the quality of the innovation.</i>
Support	<i>Describe technical expertise that will support the innovation and the customers.</i>

NAME: _____

Using the four stages of innovation diagram, design and illustrate the new innovative solution (a product, method, technology, etc.).

- Diagram of the innovation/product (provide labels and descriptions):

- Describe its projected role in the AFNR Value Chain:

- What is the projected cost of the innovation/product?

NAME: _____

Securing Innovative Ideas in the AFNR Value Chain

Aligned to the following standards:
CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6; AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1; CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1; CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8; CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

DIRECTIONS:

The best way to empower innovative and creative ideas for the AFNR Value Chain is to observe other ideas. Think critically about your classmates' innovation presentations.

Complete the following:

- Following each presentation, capture takeaways from the innovations shared by your classmates.
- Record responses below.

Innovation(s) presented: _____

Background/Need for the Innovation:	Impact of the Innovation:	Risks to Innovation:

What was the biggest takeaway from this presentation?

Innovation(s) presented: _____

Background/Need for the Innovation:	Impact of the Innovation:	Risks to Innovation:

What was the biggest takeaway from this presentation?

Aligned to the following standards:
 CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6;
 AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1;
 CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1;
 CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8;
 CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

NAME: _____

Visit the "Five Common Factors Influencing Consumer Behavior" by the iResearch Services (2018) website, available at <https://www.iresearchservices.com/5-common-factors-influencing-consumer-behavior/>.

Define each of the factors pertaining to the purchasing patterns of consumers in a free market.



Marketing Campaigns

Marketing campaigns can influence consumer choice.



Economic Campaigns

The market itself plays a large role in purchasing decisions made by consumers.



Personal Preferences

A consumers likes and dislikes will ultimately shape purchasing decisions.



Group Influence

The people that the consumer surrounds themselves with play a large role in purchasing decisions.



Purchasing Power

Regardless of the product, if it does not fit within the purchasing power of the consumer they cannot purchase the product.

What is a consumer's role in each of these steps?

The consumer has the ultimate final decision of what they can/cannot or will/will not purchase.

NAME: _____

Aligned to the following standards:
CS.01;CS.02;CS.05; CS.06; FFA.PL-A; FFA.PL-C.; FFA.PL-E.; FFA.CS-M; FFA.CS-N; AG1; AG2; AG3; AG5; AG6;
AGC05.02; AGC09.02; AGC10.03; CCSS.ELA.RI.9-10.1;
CCSS.ELA.RI.9-10.2; 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; CCSS.ELA.RST.9.10.1;
CCSS.ELA.RST.9.10.4; CCSS.ELA.RST.9.10.8;
CCSS.ELA.WHST.9.10.6; HS-ETS1-3; AFNR Career Cluster, Statement 2, AFNR Career Cluster, Statement 7; CRP.04; CRP.05; CRP.06; CRP.07, CRP.08

KEY - Importance of the Food Value Chain

DIRECTIONS:

In addition to consumer purchasing power, technology also drives what and how agricultural items are produced. Personal health, sustainability and nutrition play key roles in driving Agriculture, Food and Natural Resources (AFNR) systems. Economics, governmental regulations and policies, environment and demographics also influence the market. Even still, the food value chain supports the transportation of goods from the producer to the consumer.

Complete the following:

21. Watch Bayer Crop Science's (2017) video "Food Chain Partnership: Trends in Modern Agriculture," available at <https://www.youtube.com/watch?v=SdmWSOC4TrM>.
 - a. Optional: If YouTube is not available, browse the Bayer Crop Science's (2017) Food Chain Partnership website, available at <https://www.foodchainpartnership.cropscience.bayer.com>.
- Visit the Agricultural Marketed Resource Center (AMRC) website at <https://www.agmrc.org>.
- Using the Agricultural Marketed Resource Center (AMRC) website as a guide, record your responses below.



1) What is the definition of "value added"? What does the process of "adding value" to a product entail?

Value added is changing something physical about a product to increase the consumer/customer base.



2) Compare and contrast commodities and products. Why do we "add value" to raw commodities?

Commodities are products/goods that can be interchanged (ex. Oil) regardless of who produced the item.
Products are items that are specific for sale.
By adding value to raw commodities can help increase sales of the product.