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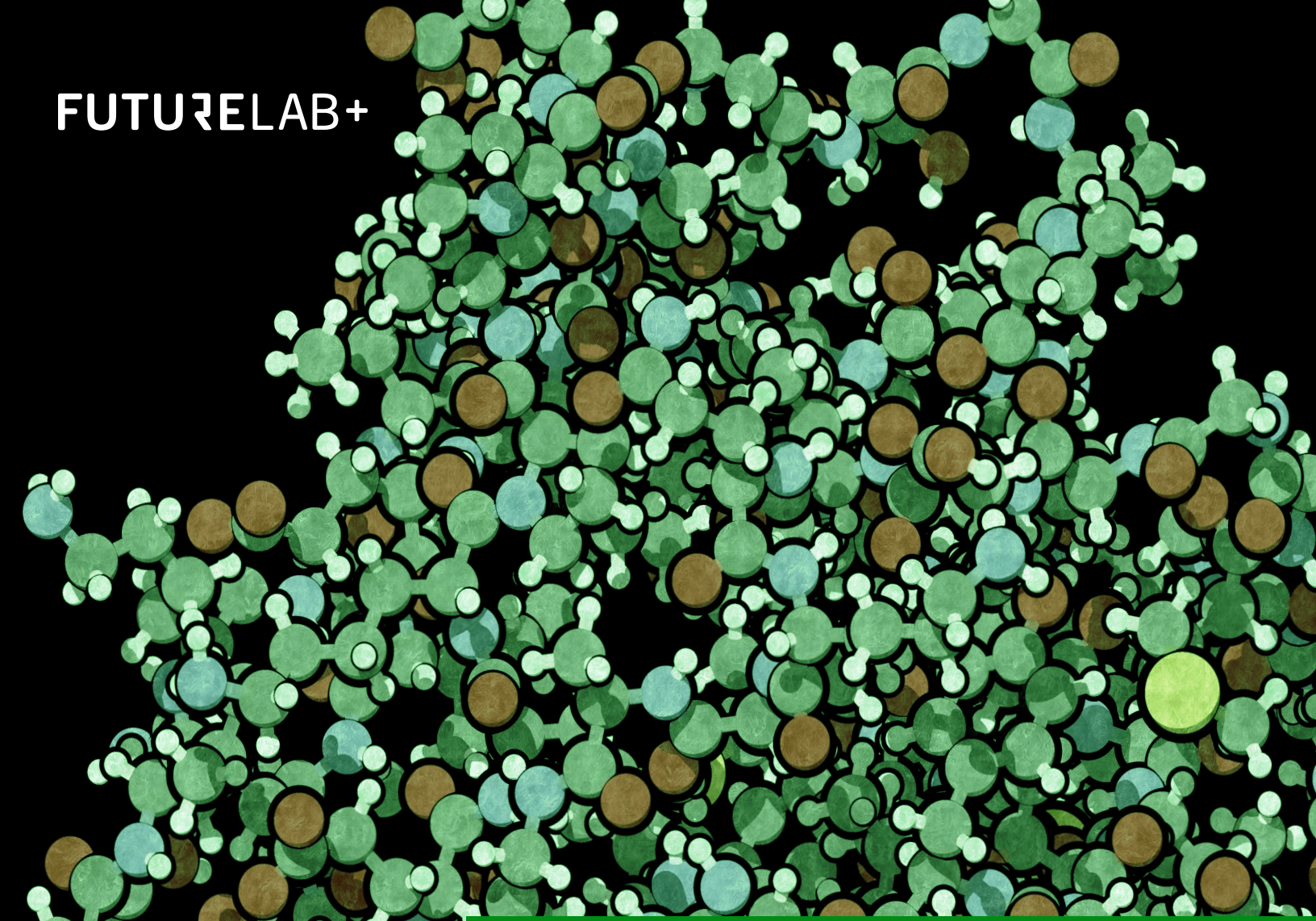


AG/ENVIRONMENTAL

Alternative Proteins

Project Rollout

Developed in partnership with:

Discovery Education and Ignited

In this Lesson Plan:

Print the **Teacher Section** →

Print the **Student Section** →

Two agriculture farm workers checking and collecting harvest of cherry tomatoes in greenhouse.

—

Cover Image
This model of a protein in cow's milk is a common allergen. Could a genetically engineered modification help?

This document is separated into two sections, For Teachers [T] *and* Student Resources [S]*, which can be printed independently.*

Select the appropriate printer icon above to print either section in its entirety.

Follow the tips below in the Range field of your Print panel to print single pages or page ranges:

Single Pages (use a comma): T3, T6

Page Range (use a hyphen): T3–T6

AG/ENVIRONMENTAL / ALTERNATIVE PROTEINS

Project Rollout

ACTIVITY DURATION

Four class sessions
(45–50 minutes each)

DRIVING QUESTION

What novel genetically engineered (GE) product can make a positive contribution to our local community?

ESSENTIAL QUESTIONS

In what ways can my community benefit from GE products?

What novel GE product concept is worth promoting in my community?

What genetic engineering techniques could be utilized to produce my novel GE product?

OVERVIEW

New GE product concepts are brainstormed, produced, and tested extensively through a product life cycle. Regardless of industry, these new GE products start as an idea aimed to solve a local or global problem within an industry or community. The majority of these GE products aim to improve the quality and longevity of life for people or increase crop yield for farmers (source: *A Brief Look at the Long History of GMO Technology*).

Using materials and acquired knowledge from previous units, students will be asked to integrate current GE products, GE industries, and community challenges to begin the ideation process of producing a new GE product concept. The final student learning product will be introduced in this unit and students will begin the concept development process as they begin investigating and adding to their collaborative website.

OBJECTIVES

Students will be able to:

Identify and **describe** an anchoring GE product (product already on the market) that can be used to guide the ideation of a new GE product idea.

Identify and **describe** a novel GE product concept that has the potential to solve a community challenge.

Create a website platform that will be used to communicate final project information.

Explain the genetic technologies that were used to create the anchoring GE product, relating DNA structure to function.

Materials

- White Board or Large Poster for Student Brainstorming
- Access to a Computer with Internet Access
- Project Notebook
- Brainstorm Capture Sheet
- Anchoring GE Product Brainstorm Capture Sheet
- Product Life Cycle Analysis Capture Sheet
- Novel GE Product Proposal Capture Sheet
- Project Platform Set-Up
- Exit Ticket

Pedagogical Framing

Instructional materials are designed to meet national education and industry standards to focus on in-demand skills needed across the full product development life cycle—from molecule to medicine—which will also expose students and educators to the breadth of education and career pathways across biotechnology.

Through this collection, educators are equipped with strategies to engage students from diverse racial, ethnic, and cultural groups, providing them with quality, equitable, and liberating educational experiences that validate and affirm student identity.

Units are designed to be problem-based and focus on workforce skill development to empower students with the knowledge and tools to be the change in reducing health disparities in communities.

SOCIAL-EMOTIONAL LEARNING

Students will practice social awareness as they design a website and create the product design. They will also engage in responsible decision making as they reflect on how the product will impact the community.

CULTURALLY AND LINGUISTICALLY RESPONSIVE INSTRUCTION

Students are asked to connect their own cultural and social experiences to the community issues they will be exploring for the project. The community liaison's role is to focus on cultural relevance throughout the project.

ADVANCING INCLUSIVE RESEARCH

In this lesson, students will thoroughly consider the needs of diverse communities in order to integrate their background research into the ideation process of a new GE product. They will be asked to assess the existing landscape of GE products and industries, as well as local community challenges, and then work collaboratively with communities to develop solutions to those challenges in an equitable manner.

COMPUTATIONAL THINKING PRACTICES

Students must connect concepts together from different areas. They must also engineer a new product design from a like model.

CONNECTION TO THE PRODUCT LIFE CYCLE

In this lesson, students first summarize existing GE products and the problems they have solved, which connects to the **discover** phase of the product life cycle. They also begin to explore tools to communicate product purposes and to advertise future technologies to potential clients, which builds on the **manufacture** and **commercialize** phases of the product life cycle.

Have you ever wondered…

How can the product life cycle for GE product production guide the ideation of a novel GE product?

All GE products follow a standard product development timeline to move from lab to consumer. Using the standard product life cycle as a guide, students will be introduced to a final project in which they will be tasked with following a similar life cycle to produce a novel GE product design. This project will include the creation of a website that will pitch the novel GE product concept to the public.

How can current GE products be used as models for the production of a novel GE product?

GE products that currently exist on the market can be used as an anchoring concept for a novel GE product design. During this unit, students will list and analyze current GE industries and GE products to select a current GE product of interest.

The current GE product will be used as a guide for answering important questions, such as those involving safety and sustainability, for the duration of students' final product production.

Which community challenges are worth driving the production of a novel GE product?

Community issues, such as equal access to quality health care, are the driving force for genetic modification. Improving the quality of life for people within a local community or on a global scale has always been a prominent goal of biotechnology innovation. What issues are worth investigating in your local community when considering a novel GE product design? Students will reflect on their own community through an equity lens during this unit as they launch their marketing campaign of a novel GE product.

MAKE CONNECTIONS!

How does this connect to the larger unit storyline?

This project roll-out will be used to kickstart students into the production of their final project; a foundation will be set for moving forward.

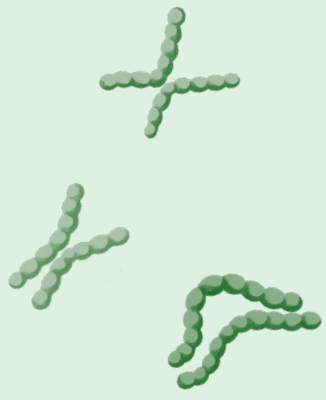
How does this connect to careers?

User interface designers are involved with how a product looks, feels, and interacts with the customer. They might be involved in user research to understand a particular need, rapid prototyping cycles to see how people interact with a product, and in the final visual or digital experience of the product.

Product designers use multiple tools (user interface, tech tools, principles of design) to recognize, define, and design a product for a particular client need. Product designers use their skills in working with people to identify customer or community pain points, brainstorm solutions for these pain points, and ultimately create a "journey map" of the product idea.

How does this connect to our world?

Students will be choosing a community challenge that will be researched on a global scale.



Day 1

Procedure

LEARNING OUTCOMES

Students will be able to:

Identify an anchoring GE product that can be used to guide the ideation of a new GE product idea.

Whole Group (15 minutes)

1 Re-introduce the driving question for the unit: What novel GE product can make a positive contribution to our local community?

2 Refer students to the Project Phase Chart Capture Sheet in the **Project Notebook** and share with students that they will be filling out the sections titled Discover—Challenge Description and Discover—Novel GE Product of the chart this week.

3 Ask students to add to their *Brainstorm Capture Sheet* to begin the discovery process.

Teacher Note > *When helping students with the community challenge, Problems facing urban, suburban and rural communities from the Pew Research Center could come in handy. Students may not be aware of what challenges exist in a typical community in your state, city, or in our nation. Helping students explore some of these social issues in your community, or in a nearby community, would be a great extension.*

4 On a white board or poster board, draw out divided sections titled *"GE Products," "Community Challenges,"* and *"GE Industries."* Ask students to add their answers from the *Brainstorm Capture Sheet* onto the main board to compile a class list.

Teacher Note > *Many examples of community challenges and GE products have been introduced in this unit thus far. It may be helpful to use these past examples as a reference point when guiding students.*

Small Group (30 minutes)

1 After exploring the class list on the *Anchoring GE Product Brainstorm Capture Sheet*, ask students to list their top three GE products, top three community challenges, and top three GE industries. Guide them through the *Anchoring GE Product Brainstorm Capture Sheet* to be sure all three choices connect in some way (i.e., the community challenge connects to the GE product and industry).

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Day 1

Continued

Procedure

2 When students are finished, collect the *Anchoring GE Product Brainstorm Capture Sheet* and provide feedback to students before tomorrow's lesson. Use the following guidelines for feedback:

a. When evaluating the project design ideas, be sure the industry and GE product align.

b. Does the community challenge connect to student experiences or do they show a genuine interest in helping solve this challenge? If necessary, offer additional resources or suggestions of other products or challenges that could be explored.

Whole Group (10 minutes)

1 Share with students the Final Project Outline from their **Project Notebook**. Students will be using this throughout the entirety of the unit.

2 Emphasize the goal of the project: to develop a novel GE product that will help the local community.

3 Share with students that to start the production process, they must collect and recap the GE products, community challenges, and GE industries they have explored thus far. These will be used to guide the ideation process for the creation of new products that can solve challenges in the community.

Homework

Show students the *Product Life Cycle Analysis Capture Sheet* and assign it as homework. During this activity, students will be comparing and analyzing two product life cycles.

Discover product idea ⟶	**Develop** knowledge ⟶	**Manufacture** product ⟶	**Commercialize** product
Community struggle	Community background	Production process	Marketing and communications
Solution—novel product	Product design & safety		

Day 2

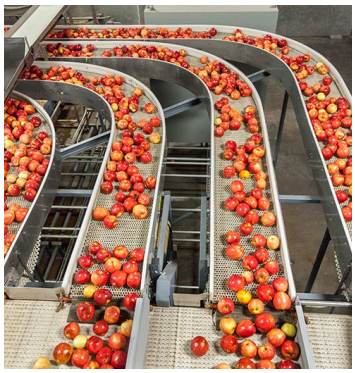
LEARNING OUTCOMES

Students will be able to:

Identify a novel GE product concept that has the potential to solve a community challenge.

INDUSTRY AND CAREER CONNECTION

Tell students they are taking on the role of a Product Designer, who recognizes, defines, and designs a product for a particular client need. Product designers use their skills in working with people to identify customer or community pain points, brainstorm solutions for these pain points, and ultimately create a "journey map" of the product idea.



Procedure

Whole Group (5 minutes)

1. Discuss the reflection questions that students were given on the *Product Life Cycle Analysis Capture Sheet*.
2. Give each student group the feedback you provided on the *Anchoring GE Product Brainstorm Capture Sheet*.
3. Share with students that they will now take one of their community challenges and use it to guide the production of a novel (new) GE product. The purpose of this activity is to integrate all knowledge up to this point into a design concept. This novel GE product will be the product of focus throughout the entirety of the unit.

Small Group (45 minutes)

1. Provide students time to walk through the *Novel GE Product Proposal Capture Sheet*. Students will need to brainstorm at least *three* potential novel GE products.
2. As students work through this process, use the following questions to help guide them:
   - **a.** Does the novel GE product have an anchoring GE product to guide the research process? Use the *Anchoring GE Product Brainstorm Capture Sheet* for guidance.
   - **b.** Does the new design have a purpose in connection with the community challenges? What is the *why*?
   - **c.** Which GE industry would be interested in taking on the production of this product?

Teacher Note > *The questions below can be adapted for self-assessment, peer feedback among groups, or as a guide for providing teacher feedback to groups. Before tomorrow's lesson, be sure to approve one design for students to proceed with for the rest of the unit.*

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Day 2

Continued

Procedure

3 When students are finished, collect the *Novel GE Product Proposal Capture Sheet* and approve *one* design concept for each group to proceed with for the rest of the unit.

a. Does the novel GE product have an anchoring GE product to guide the research process? If not, what product can you use to guide your process?

b. Does the new design have a purpose in connection with the community challenges?

c. Which GE industry would be interested in taking on the production of this product?

d. Are students genuinely interested in this topic? Do they have a connection to the community challenge?

e. Do all aspects of this project (*anchoring* GE product, *novel* GE product, GE industry, and community) connect and make sense?

Day 3

LEARNING OUTCOMES

Students will be able to:

Create a website platform that will be used to communicate final project information.

INDUSTRY AND CAREER CONNECTION

Share with students that User Interface Designers are involved with how a product looks and feels. They might be involved in user research to understand a particular need, rapid prototyping cycles to see how people interact with a product, and in the final visual or digital experience of the product.

Procedure

Whole Group (15 minutes)

1. Pass out the reviewed *Novel GE Product Proposal Capture Sheet* with the approved project topics to each group. Let students know that if at any point the project product reaches a dead end, the other brainstormed products can be used as backup.

2. Have each group quickly share out their approved project topic to other groups in the class. If time allows, a peer review of project topics can be facilitated.

Teacher Note > *There are many free website creation sites available online. The learning curve to understand these sites is usually small and the platform is user friendly for students. Wix and Weebly are two examples of websites that offer this feature.*

3. Present to students the selected project platform for this project that will be used to communicate the production process to the public. Use the *Project Platform Set-Up* to aid in the presentation to students.

4. Discuss with students the following while the platform is being presented:
   - **a.** What experience do you have with website design?
   - **b.** What topics do you think should be highlighted in the pages of the website?
   - **c.** What are some equity limitations for communicating your product through a website?

Small Group (30 minutes)

1. Provide students time to create an account for website creation and explore the features the website has to offer.

2. Encourage students to a) have a website theme selected, b) invite their group to collaborate on the website so all have access to one site for editing, and c) begin to form the site headings using the Final Project Outline—Discover (Part 1) from their **Project Notebook** as a guide. If time allows, have students start working on the Discover section of the Final Project Outline—Discover (Part 1).

3. Before students leave, have them fill out the *Exit Ticket* and use this as a guide to drive tomorrow's lesson.

Teacher Note > *If time allows, facilitate opportunities for students to provide feedback on each other's website designs.*

Day 4

LEARNING OUTCOMES

Students will be able to:

Identify and **describe** an anchoring GE product that can be used to guide the ideation of a new GE product idea.

Explain the genetic technologies that were used to create the anchoring GE product, relating DNA structure to function.

Identify and **describe** a novel GE product concept that has the potential to solve a community challenge.

Create a website platform that will be used to communicate final project information.

Procedure

Whole Group (10 minutes)

1	Recap the previous day's activities and share with students that the goal of today is to begin adding content on the website.
2	Ask groups to assign their members the following roles after they explore the role descriptions at the top of the Final Project Outline—Discover (Part 1) in their **Project Notebook**: a) Community Liaison, b) Industry Expert, c) Genetic Engineer, and d) Concept Designer.
3	Inform students that they will be completing the Final Project Outline—Discover (Part 1) by answering the provided questions. They will use their own research and materials from previous lessons. The information they gather can be then transferred to the website they created yesterday.

Teacher Note > *Remind students that this website is designed for the public. They will need to cite all their sources and summarize the information in a way that the general public can understand. An example of how they can organize these pages is found on Project Platform Set-Up. Students can use the Daily Goal Capture Sheet from the Project Notebook as a guide for assigning group roles for the day.*

Small Group (40 minutes)

1	Allow students time to collaborate on representing information from the Final Project Outline—Discover (Part 1) on their final website.
2	Remind students that once they finish answering the questions on the capture sheet, they can move on to representing the knowledge they have gained onto their collaborative website.

Individual Work (5 minutes)

Refer students to the Project Phase Chart Capture Sheet from last week and ask them to fill out the sections titled "Discover—Community Challenge" and "Discover—Novel GE Product" to conclude the lesson this week.

National Standards

Next Generation Science Standards

LS1-1 From Molecules to Organisms: Structures and Processes
Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.

LS2-7 Ecosystems: Interactions, Energy, and Dynamics
Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

LS4-6 Biological Evolution: Unity and Diversity
Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Science and Engineering Practice
Engaging in Argument from Evidence
Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and/or logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations).

Career and Technical Education (CTE)

A1.1
Use data to explain how biotechnology fields such as pharmaceuticals, agriculture, diagnostics, industrial products, instrumentation, and research and development are impacting human life.

A1.2
Describe the use of model organisms in biotechnology research and manufacturing.

A1.5
Evaluate the impact of biotechnological applications on both developing and industrial societies, including legal and judicial practices.

A5.1
Use the Internet and World Wide Web to collect and share scientific information.

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National Standards

CTE *Continued*	**A5.2** Use a variety of methods, including literature searches in libraries, computer databases, and online for gathering background information, making observations, and collecting and organizing data.
	A9.1 Describe the major steps of a product's move through a company's product pipeline.
	A9.2 Identify several products obtained through recombinant DNA technology.
	4.1 Use electronic reference materials to gather information and produce products and services.
	5.1 Identify and ask significant questions that clarify various points of view to solve problems.
	5.4 Interpret information and draw conclusions, based on the best analysis, to make informed decisions.
	7.3 Understand the need to adapt to changing and varied roles and responsibilities.
	7.4 Practice time management and efficiency to fulfill responsibilities.

Brainstorm Capture Sheet

ANSWER KEY **Do not share with students**

Directions
Think back to previous lessons and list some of the GE products, industries, and community challenges that have been explored. You will use this capture sheet to identify your top three products, industries, and challenges of interest.

GE Products We Have Explored	GE Industries	Community Challenges
Web-spinning goats Fast-growing salmon Flavr savr tomato Cancer-fighting tomatoes Less poop pigs Glow-in-the-dark kittens Leafy broccoli Ruby red grapefruit Miniature corgi Golden Rice Bt corn Bt cotton Biofortified cassava Iron-fortified beans Impossible Burger Virus-resistant papaya Disease-protected potatoes Arctic apples Others: Allow students time to research.	Medicine (medical advancement and vaccines) Farming (sustainable practice and crop production) Nutrition (wellness and meat protein) Food retail (food storage and shelf life) Others: Allow students time to research.	Malnutrition Vaccine production Less food waste More affordable food due to higher yield (for example, disease resistance) Support for local farmers by helping crops be resistant to changing climate Healthier options for food Less impact on climate change or greenhouse gas emissions Others: Allow students time to research.

Anchoring GE Product Brainstorm Capture Sheet

ANSWER KEY **Do not share with students**

Directions
Fill out the chart below using the class brainstorm activity as a guide. Internet research is encouraged. Please put your preferred project choices in order (top choice at the top of the table).

Examples shown below.

	Genetically Engineered Product of Interest *one that has already been discussed*	**GE Industry**	**Community Challenge**	**Personal Experience** *or Understanding of Community Challenge*
1	Golden Rice	Nutrition/wellness	Health of the community, specifically unequal access to nutritious food that provides Vitamin A; Vitamin A is important in development.	Having equal access to nutritious food is a community challenge. Unequal access can be a result of a) poverty, or b) lack of education on what foods are important for development.
2	Arctic apple	Food retail	Food waste, shelf life, and cost of food; if apples are able to have less browning than a) there could be less waste both in homes and in large event settings, and b) they could be on grocery store shelves longer, which could keep the cost of the fruit lower.	My family buys apples. My younger siblings eat them and I eat them in the cafeteria. My parents buy a lot of fruit and we often throw it out if we cannot eat it quickly.
3	Drought-tolerant soybeans	Farming	Drought and climate change	My community is challenged by drought. I have heard that farmers are concerned about yearly droughts, and climate change is a worry of mine. I heard soy is in a lot of food, even some we don't think it is in.

Product Life Cycle Analysis Capture Sheet

ANSWER KEY **Do not share with students**

Directions
Compare the two product life cycles, Genentech's and our novel GE product, and answer the following reflection questions.

1. Why would a standard development timeline be important in product production?

With many entities involved in the production of a product, a timeline helps keep all groups on track; it establishes a common goal.

2. How will our product production process compare to the process that Genentech uses?

Food and Drug Administration (FDA) regulation will be conducted during the manufacturing stage with Genentech; Genentech is mainly human-health focused while GE products involve many industries, etc.

3. What possible limitations exist in this product production process?

Answers will vary.

Possible answers: Soft skills are not listed. Some products could require adaptations beyond what is listed.

Novel GE Product Proposal Capture Sheet

ANSWER KEY **Do not share with students**

Directions
As a group, brainstorm three novel GE products that you could develop. Your teacher will approve one of these three for you to focus on throughout the rest of this unit.

Examples shown below.

	***Novel* GE Product** *Must be original. You can list or draw your product.*	***Novel* GE Product Description**	**Purpose** *What community challenge is this trying to solve?*	**Anchoring GE Product/GE Industry** *What products and industries will you use to guide your research?*
1	Edible vaccine for COVID	An edible vaccine would be some sort of popular food product, such as a fruit or candy, that would deliver genetic information into the body. It would start an immune response similar to a vaccine delivered via a needle.	Equal access to vaccines, more efficient process to deliver vaccines to the community	Product: "hard candy vaccines" that are currently being explored Industry: medical industry
2	Almonds that require less water	Almonds are grown in my local community and they require a lot of water. This product will allow almonds to thrive without as much water to help conserve this resource in my community.	Water is scarce in my community. If farmers were able to use less water to grow almonds, more water would be conserved. In addition, the price of almond milk, a more sustainable dairy substitute, could be more affordable.	Product: drought-resistant soybeans Industry: farming
3	Peanuts that do not trigger allergies	Peanut allergies can be deadly. This product will allow allergy-free peanuts in my community and would prevent students from feeling embarrassed that they cannot eat peanuts when all their friends can.	Restaurants have to pay attention to which foods have peanuts and people with a peanut allergy have to worry about their health daily. This would allow people to live worry-free and feel less restricted in their food choices.	Product: allergy-free peanuts Industries: nutrition and medical

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Brainstorm Capture Sheet

Directions
Think back to previous lessons and list some of the GE products, industries, and community challenges that have been explored. You will use this capture sheet to identify your top three products, industries, and challenges of interest.

GE Products We Have Explored	GE Industries	Community Challenges

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Anchoring GE Product Brainstorm Capture Sheet

Directions
Fill out the chart below using the class brainstorm activity as a guide. Internet research is encouraged. Please put your preferred project choices in order (top choice at the top of the table).

	Genetically Engineered Product of Interest *one that has already been discussed*	**GE Industry**	**Community Challenge**	**Personal Experience** *or Understanding of Community Challenge*
1				
2				
3				

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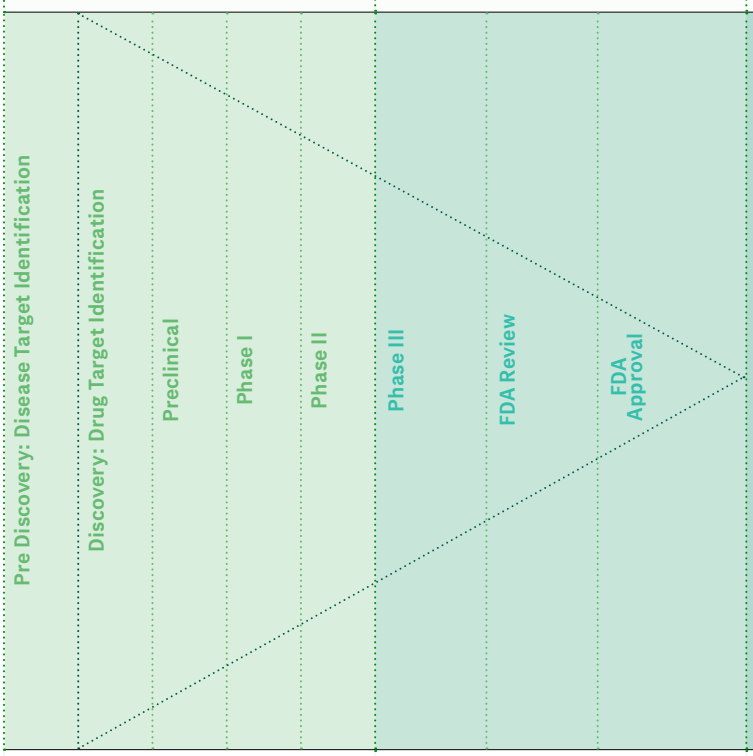
Product Life Cycle Analysis

Genentech Product Life Cycle

Discovery	Develop	Manufacture	Commercialize
Includes: Early Stage Research, Late Stage Research, Early Clinical Trials	*Includes: Stage III clinical trials, FDA review and approval*	*Includes: Technical Operations*	*Includes: Commercial, Medical and Government Affairs*



Discovery	Develop	Manufacture	Commercialize
Jobs include:	*Jobs include:*	*Jobs include:*	*Jobs include:*
Research	Biometrics	Innovation, Technology and MSAT	BioOncology
Developmental Science	Clinical Operations	Pharma Technical Regulatory	Opthamology & Immunology
Early Clinical Development	Clinical Science	Product & Supply Chain Management	IMPACT
Project Management and Operations	Personalized Healthcare	Quality and Compliance	Business Operations
Partnering	Portfolio and Product Development Strategy	Global Engineering & Facilities	Managed Care & Customer Operations
	Medical Affairs	Drug Product Manufacturing	US Medical Affairs
	Quality	Drug Substance Manufacturing	Government Affairs
	Regulatory	Global Technical Development	
	Safety Risk Management	Strategy Office	

Jobs include:

Science Communications

Bioethics

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Product Life Cycle Analysis

Our Novel GE Product Life Cycle

Discover Product Idea Lesson 7	**Develop Knowledge Lesson 8**	**Manufacture Product Lesson 9**	**Commercialize Product Lesson 10**
Includes: Introduce the novel GE product by describing the product idea, community struggle, and the anchoring GE product that will guide the research.	*Includes: Market research on community beliefs, needs, and struggles and further research on genetic engineering techniques and safety.*	*Includes: Deeper dive into the regulatory process of GMOs, the production process (plus stakeholders involved), sustainability efforts, and a prototype of product.*	*Includes: Promoting product to the community in a mindful and culturally relevant way.*
a Community Struggle Driving question: What community problem is worth exploring in your community?	a Community Background Driving question: What survey data could provide more insight into the need of this product?	a Farm to store process Driving question: What production process, from lab to consumer, could be implemented to produce this product?	Ad Campaign — 1 Print Ad — 1 TV or radio — 1 Social media — 1 Endorsement
b Industry Spotlight Driving question: What is your industry doing right now with GE technologies?	b GE technology Driving questions: Which technology do you plan to use? How does it work?	b Sustainability and Equity Practices Driving question: What sustainability practices need to be considered?; What equity considerations should be highlighted to avoid unintended consequences?	
c Identifying anchoring GM product Driving question:What community problem is worth exploring in your community?	c Protein product Driving question: What is the target gene and alternative protein product?	c Related careers Driving question: Which professionals will come in contact?	
d Solution—Novel GM Design Driving question: What novel (new)GE product is worth introducing into your community?	d Safety Driving question: Clinical data of similar GMO?	d Final Product Prototype Driving question: What is your product going to look like to consumers?	
Jobs include: Researcher Community Liaison Genetic Engineer Concept Designer Project Manager	*Jobs include:* Marketing Analysts Community Liaisons Industry Experts Genetic Engineers Product Designers	*Jobs include:* Sustainability Directors and Sustainability Engineers Research and Development Teams	*Jobs include:* Marketing Director Public Relations Officer Social Media Influencer Actor Director

Jobs include:

Science Communications

Bioethics

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Product Life Cycle Analysis Capture Sheet

Directions
Compare the two product life cycles, Genentech's and our novel GE product, and answer the following reflection questions.

1. Why would a standard development timeline be important in product production?

2. How will our product production process compare to the process that Genentech uses?

3. What possible limitations exist in this product production process?

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Novel GE Product Proposal Capture Sheet

Directions
As a group, brainstorm three novel GE products that you could develop. Your teacher will approve one of these three for you to focus on throughout the rest of this unit.

Novel* GE Product** *Concept* ***1

Must be original.
You can list or draw your product.

***Novel* GE Product Description**	
Purpose *What community challenge is this trying to solve?*	
Anchoring GE Product/ GE Industry *What products and industries will you use to guide your research?*	
Is the project approved?	

Continues next page >

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Novel GE Product Proposal Capture Sheet

Continued

Novel* GE Product** *Concept* ***2

Must be original.
You can list or draw your product.

***Novel* GE Product Description**	
Purpose *What community challenge is this trying to solve?*	
Anchoring GE Product/ GE Industry *What products and industries will you use to guide your research?*	
Is the project approved?	

Continues next page >

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Novel GE Product Proposal Capture Sheet

Continued

Novel* GE Product** *Concept **3

Must be original.
You can list or draw your product.

***Novel* GE Product Description**	
Purpose *What community challenge is this trying to solve?*	
Anchoring GE Product/ GE Industry *What products and industries will you use to guide your research?*	
Is the project approved?	

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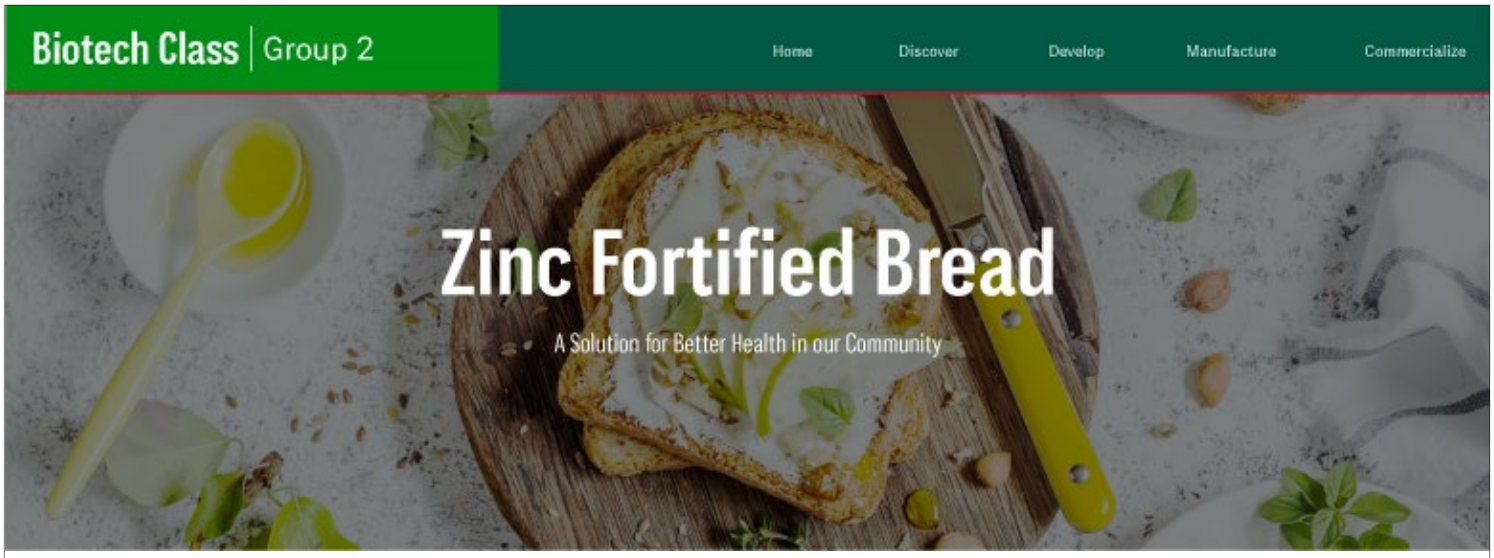
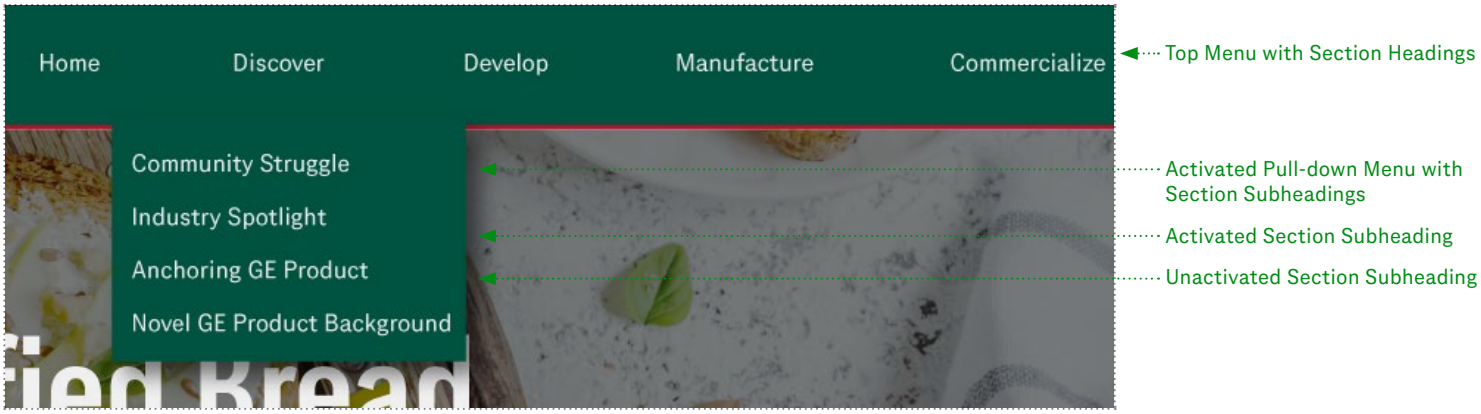
Project Platform Set-Up

Directions
Use this example website set-up of a home page with section headings and subheadings to help kick-start a plan for your website, designed for the public, to communicate about your novel GE product.

Example Home Page Set-Up





FUTURELAB+

Exit Ticket

Directions
Reflect on the day's activities to answer the following questions.

Group Members

1. Which of the following did you accomplish today? Please check all that you completed.

   - ☐ All students in your group have a website login.
   - ☐ Your group has selected a website theme.
   - ☐ All students in your group have access to a shared website.
   - ☐ All non-class content has been deleted from the theme template.
   - ☐ Your group has started organizing page headings and sections by using the Final Project Outline of your **Project Notebook**.

2. How did you organize the sections of the Final Project Outline on your website?