



FUTURELAB+

AG/ENVIRONMENTAL

Alternative Proteins

Ad Campaign— Commercialization

Developed in partnership with:
Discovery Education and Ignited

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

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Single Pages (use a comma): T3, T6

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Cover Image

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

AG/ENVIRONMENT / ALTERNATIVE PROTEINS

Ad Campaign—Commercialization

DRIVING QUESTION

How can you effectively commercialize your novel GE product?

OVERVIEW

Educating the local community involves understanding how the community thinks and how they will receive the novel GE products. When advertising executives start creating ad campaigns, they run focus groups to gain knowledge about misunderstandings related to the product or product type. A similar approach is used by community educators. Compiling these data into advertisements and informational campaigns allows marketing teams to provide all the needed information to their target audience in multiple ways to ensure the success of a new product.

Students will start by analyzing the data collected in Lesson 8 from various community stakeholders. This will inform the scripts and drafts of the ad series. Finalizing the information website with the ad campaign and last-minute revisions will finish off the project.

ACTIVITY DURATION

Six class sessions (45–50 minutes each)

ESSENTIAL QUESTIONS

How can you effectively inform people about your novel GE product?

How can you best educate your community about your novel GE product to gain community support?

What makes effective biotechnology advertising?

OBJECTIVES

Students will be able to:

Identify and **highlight** important data from survey results and interviews for both advertising and informational purposes.

Develop a series of advertisements to compel their local community to utilize their novel GE product.

Curate information about GE products, including their novel GE product, into an informational website to be shared with the local community.

Materials

Interview Notes Capture Sheet

Survey Analysis Capture Sheet

Project Notebook

Have you ever wondered...

What types of advertisements will be most effective for your local community and your novel GE product?

Advertisements are effectively presented in print, radio, television, social media, and other platforms that are viewed often by people. When it comes to educating the community about a novel GE product, being intentional about which platform to pursue is largely driven by the identified target audience. In this lesson, students will be tasked with the challenge of creating a public service announcement campaign to supplement their informational website. The advertisements will be created with community feedback in mind with the goal of gaining support in product development.

How can you structure an informational website to best highlight the positive parts of your novel GE product?

Providing easy-to-understand information on a new GE product is important for community acceptance and transparency. During this lesson, students will be completing their final website to promote, educate, and inform their community on both their novel GE product and the community challenge it aims to mitigate. After community stakeholders view this website, they should have a better understanding of the development, manufacturing, safety, and goal of the novel GE product.

MAKE CONNECTIONS!

How does this connect to the larger unit storyline?

This is the final lesson. Students will take all they have learned about GE products, their novel GE product, and their local community to create a series of ads that will finalize their informational website.

How does this connect to careers?

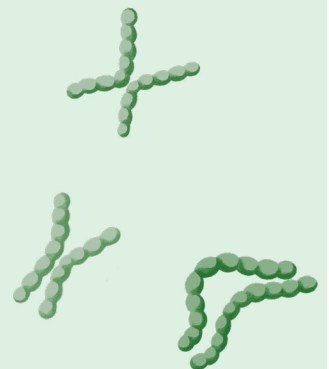
Marketing directors create and oversee marketing campaigns and determine the outreach and approach for their target audience. They use information from user research in order to plan targeted ad campaigns and disseminate pointed messaging that increases sales of their product.

Public relations directors manage the delivery and creation of marketing messages that positively raise the public image of a product. They ensure their product brand is accurately and effectively communicated to the target audience.

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.

How does this connect to our world?

Public perception of GE products can vary among different communities, cultures, and parts of the world. Combating misinformation with increased education and transparency on novel products can allow people to create an informed stance on whether a novel product is important to them or their community as a whole.



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 be taking the perspectives of others into account when designing ad campaigns and informational websites. Students will be specifically focused on communication within their groups and with public stakeholders.

CULTURALLY AND LINGUISTICALLY RESPONSIVE INSTRUCTION

Students and teachers will be communicating ideas (or framing instruction) in a way that is relevant to people within the local community, especially when carrying out the ad campaign. Students will be informing the public on a real-world issue that is impacting their own community. This issue is the framework for the project and ad campaign they are completing in this lesson.

ADVANCING INCLUSIVE RESEARCH

The final information website is focused on informing all people in the community about the GE product, as well as the background research, interviews, opinions, and content that went into its development. The ad campaigns will be designed with cultural responsiveness in mind. Student understanding of the community challenge is framed with a mindset of increasing equity and inclusion.

COMPUTATIONAL THINKING PRACTICES

Educational advertising products and informational websites require computational thinking as students design authentic learning activities

to solve problems, with an awareness of design choices. The learning environments will value and encourage varied viewpoints, student agency, creativity, engagement, joy, and fun.

CONNECTION TO THE PRODUCT LIFE CYCLE

The main focus of this lesson is **commercialization**, including creating the framework for community support in novel products. Students design targeted ads and an informational website using the qualitative and quantitative data collected in community surveys and through reviewing other product pipelines. This focus emphasizes customer relations and serves to commercialize the product designed in the last several lessons.

Day 1

LEARNING OUTCOMES

Students will be able to:

Identify the qualities of different types of graphs and **discern** the appropriate mathematical model for their data.

Create a mathematical model that illustrates collected data.



Procedure

Teacher Note > *As part of the final assessment, each group will receive peer feedback using the Final Project Rubric in their Project Notebook. After incorporating this feedback, use another copy of the Final Project Rubric to assess the full website.*

Whole Class (5–10 min)

- 1 Lead a discussion about data analysis using the following prompts:
 - a. What types of graphs might be helpful to see trends in the data you gathered?
 - b. How can anecdotal (story) data be used on your website?
 - Why is it important to show or include who said the story?
 - c. If the data does not support your GE product, what should you do with it?
 - d. Why is it good to have a combination of qualitative and quantitative data?
 - How does it help if you are trying to convince someone of something?

Teacher Note > *As a scaffold for students with less statistical knowledge, the National Center for Education Statistics (NCES) has a wonderful [Graphing Tutorial](#).*

Group Work (30–40 min)

- 1 Groups will need to compile all the data they obtained. This includes the interview notes and the survey data. Students can track progress on the Daily Goals Capture Sheet of their **Project Notebook**.
- 2 Community Liaison and Product Designer: Look through all the interview notes and complete the [Interview Notes Capture Sheet](#).
- 3 Genetic Engineer and Industry Expert: Look through the survey data and complete the [Survey Analysis Capture Sheet](#).
- 4 Once group members have completed the capture sheets, they can start making decisions about which data to include in the website. Things to consider include:
 - a. What story do you want to tell with the data?
 - b. What emotion are you trying to convey with the data?
 - c. How do these data support the creation and sale of your product?

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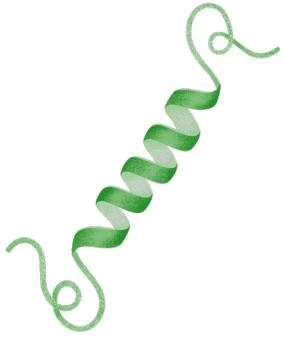
Day 1

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Procedure

Whole Class (5–10 min)

- 1 Bring the class back together and have groups share which type of data was the most interesting and why.



Day 2

LEARNING OUTCOMES

Students will be able to:

Identify and create logos, slogans, and brand statements.

Identify ad formats that are best suited for their novel GE product.



Procedure

Whole Class (10–15 min)

- 1 Lead a class discussion using the following questions as prompts:
 - a. When has an advertisement actually convinced you to buy something (it may have been consciously or subconsciously)?
 - b. What is a logo?
 - c. How can logos help sell things? Can you think of a logo that has increased brand recognition?
 - d. What is a slogan?
 - e. How can slogans help sell things? Can you think of a slogan that has helped sway you into purchasing from the company?
 - f. What is a brand statement? (This one might be more challenging and students may need an example or two of brand statements pulled from the Internet).
 - g. How can brand statements help sell things? Who are brand statements designed to persuade?

Group Work (30–40 min)

- 1 Break students up into their group roles and monitor them as they aim to complete the following:
 - a. Community Liaison: Start adding the community data to the website and add the relevant data to the ad products the Product Designer and Genetic Engineer are creating.
 - b. Industry Expert: Work on designing the logo, slogan, and brand statement. Collaborate with the Product Designer to make sure they are all on brand.
 - c. Product Designer: Work with the Genetic Engineer on determining which types of ads will be the most helpful for raising public awareness for your novel GE product in your community. Together start designing print ads and writing scripts for the radio, TV, and social media ads.
 - d. Genetic Engineer: Work with the Product Designer on ads campaigns and types.

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Day 2

Continued



Procedure

Teacher Note > *Students can track progress on the Daily Goals Capture Sheet in their Project Notebook. Now that students are starting to finalize their project, direct them back to the final rubric. This will allow them to incorporate the necessary materials as they create, reducing the need to go back after peer reviews and do heavy revisions.*

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- 2 Sign off on drafts of scripts and print ads.

Day 3

LEARNING OUTCOMES

Students will be able to:

Create ads that are relevant and informative about their novel GE product.

Collaborate on incorporating feedback and community concerns into final ad products.



Procedure

Two Groups Work (10–20 min)

- 1 Have groups pair up to review their ads campaign drafts. Have groups use the following questions to guide their feedback.
 - a. Does the ad catch your attention?
 - b. Is it trying to sell you something specific?
 - c. Is it trying to change your opinion about something?
 - d. What would you add or take away?
- 2 Have students record the needed changes on the Daily Goals Capture Sheet of their **Project Notebook** to track their progress on making revisions.

Group Work (30–40 min)

- 1 Groups work on creating and filming the ad products.

Teacher Note > Searching the Internet for “free online video editor” will give students multiple resources for creating and editing their video ad campaign. Most of these websites also have a quick tutorial. Students can also search for “create video ads” to find short tutorial videos to help them create catchy interesting video ads.

- 2 Once ad products are developed, break students up into their group roles and monitor them as they aim to complete the following:
 - a. Community Liaison: Finalize the Commercialization section of the website.
 - b. Industry Expert: Finalize the Manufacturing section of the website.
 - c. Product Designer: Finalize the Discover section of the website.
 - d. Genetic Engineer: Finalize the Develop section of the website.

Day 4–5

LEARNING OUTCOMES

Students will be able to:

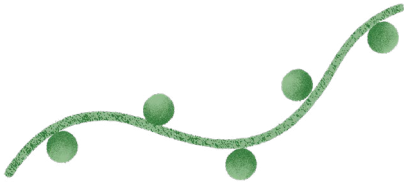
Synthesize information about their novel GE product in an accessible website.

Procedure

Teacher Notes > *As students are filming and editing the ad and compiling the information into their website, they are all developing skills of user interface design.*

Group Work (40–50 min)

- 1 Groups work on creating and filming the ad products. (Students can track progress on the Daily Goals Capture Sheet from their **Project Notebook**.)
- 2 Once ad products are developed, break students up into their group roles and monitor them as they continue to complete the following:
 - a. Community Liaison: Continue work on website sections.
 - b. Industry Expert: Finalize the Manufacturing section of the website.
 - c. Product Designer: Finalize the Discover section of the website.
 - d. Genetic Engineer: Finalize the Develop section of the website.



Day 6

Procedure

LEARNING OUTCOMES

Students will be able to:

Constructively work to help classmates design a better final product.

Incorporate constructive criticism into their final products.

Group Work (5–10 min)

- 1 Have groups add final touches to the website prior to peer review.

Two Group Work (20–30 min)

- 1 Each group will switch websites with another group. As a group, students will review the other group's website using the following roles:
 - a. Community Liaison: Use the Marketing page of the Final Project Rubric in the **Project Notebook** to grade and add recommendations for the Commercialize section of the website.
 - b. Industry Expert: Use the Manufacturing page of the of the Final Project Rubric in the **Project Notebook** to grade and add recommendations for the Manufacture section of the website.
 - c. Product Designer: Use the Discover page of the Final Project Rubric in the **Project Notebook** to grade and add recommendations for the Discover section of the website.
 - d. Genetic Engineer: Use the Develop page of the Final Project Rubric in the **Project Notebook** to grade and add recommendations for the Develop section of the website.
- 2 Have groups exchange rubrics and feedback.

Group Work (15–20 min)

- 1 Using peer review feedback, groups should add final touches to their websites prior to submission.

Teacher Notes > Use *Final Project Rubric in the Project Notebook* to grade student projects.

National Standards

Next Generation Science Standards

Career and Technical Education (CTE)

Science and Engineering Practice

Obtaining, evaluating, and communicating information

Communicate scientific and/or technical information or ideas in multiple formats (i.e., orally, graphically, textually, mathematically).

A2.4

Understand the critical need for ethical policies and procedures for institutions engaged in biotechnology research and product development.

A2.6

Prepare a presentation comparing the benefits and harm that can be the result of biotechnology innovations in both the research and application phases and which course of action will result in the best outcomes.

A9.1

Describe the major steps of a product's move through a company's product pipeline.

A9.3

Outline the steps in production and delivery of a product made through recombinant DNA technology.

2.5

Communicate information and ideas effectively to multiple audiences using a variety of media and formats.

4.3

Use information and communication technologies to synthesize, summarize, compare, and contrast information from multiple sources.

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- You will want to make sure these are addressed in your final website either in a question-and-answer format or through your data, text, and advertisements.

- This should be taken into account when reviewing the Community Challenge Description section on your website.

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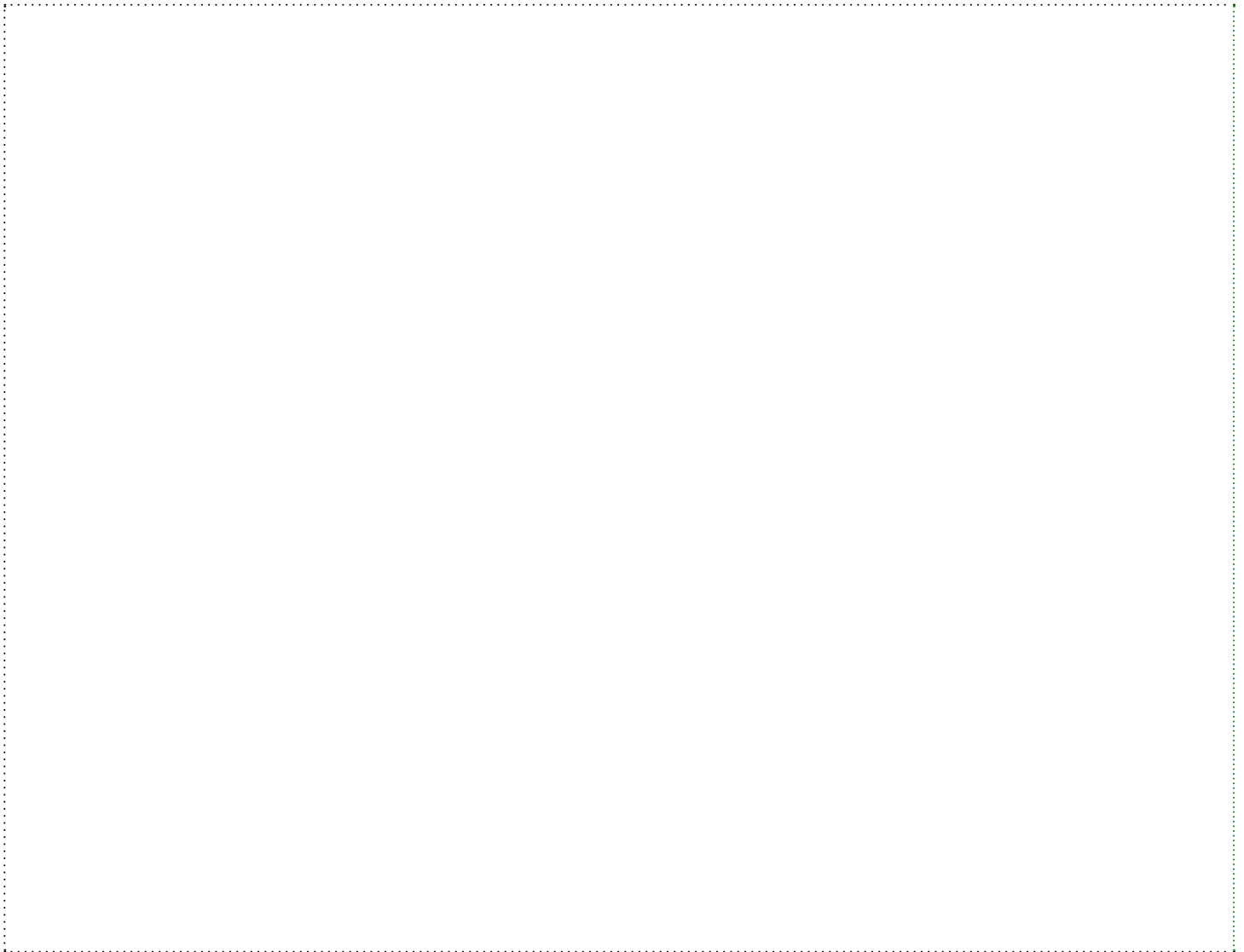
Survey Analysis Capture Sheet

Directions

You will need all your survey materials, including notes, results, and the summary capture sheet to complete this capture sheet. The goal of this capture sheet is to help you organize the information in an effective manner and add it to your website.

1. Create a graph to represent the data gathered from each of the survey questions asked.

To determine the type of graph, think back to the class discussion at the start of class.



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3. Which graph gives the best information and should be included on your website?

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5

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4. Were there any quotes from short answer questions that sound like endorsements or that should be included on the website? If so, include them below.
5. What did you learn from the survey collection?

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