

NEW YORK STATE FFA  
FOOD SCIENCE CAREER DEVELOPMENT  
EVENT  
STUDY GUIDE



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Fellow Agricultural Educators, students (and food connoisseurs):

Enclosed you will find the information for the New York State version of the Food Science and Technology CDE. The format follows the National CDE format. The winning team is eligible to compete at the National FFA convention.

With that said, the primary focus of the contest is to challenge students to think about food in a different way, and have fun doing it. The product development process is key to the contest, while the technical and safety aspects are important to overall success. Please read the information carefully and contact me if there are any questions. Better to clear them up early, rather than the day of the event.

#### HIGHLIGHTS OF THE FOOD SCIENCE CDE

- The event requires four people. A three person team has one row of zeros that lowers scores significantly. Smaller teams can't be accommodated.
- Maximum of two teams per school please. We have limited resources, time, and space.
- Individual members will compete in: triangulation, customer complaint, aroma identification, written test, photo identification for safety and quality
- Carefully observe score sheets in preparation for product development event.
- Time is your worst enemy – team efficiency is critical
  
- The written test will be from the Food Processing Guide out of the University of Arkansas. Specific chapters will be targeted each year. Test format may vary from year to year.
- Triangulation test – identify one food sample that is not the same as two other samples
- Aroma test – properly identify aromas identified on the list 5-10 samples possible. Samples will be covered so appearance will not be able to be used as an indicator.

Make sure all team members understand that there are four individual events they must complete along with team event. This takes time and patience.

**Cell phone use or visibility during the contest will result in immediate team disqualification. This includes the holding area. Please do not test this guideline.**

In the end, a sharp team with a general knowledge of food science will enjoy the event and be competitive. In an ideal setting, the more food science knowledge, the better the score, but the team problem allows for creativity and elements not directly related to food science. Study for the test and be aware of the score sheet for product development team portion.

NY State Food Science & Technology CDE  
Food Safety and Quality Practicum

CUSTOMER COMPLAINT LETTER

Assume you are responsible for Food Safety and Food Quality in a food processing company. Each team member will receive a different representative consumer complaint letter sent to a food processing company. You have 15 minutes to study the letter and decide your answers to the questions below. Answer the questions briefly. No talking please.

Questions #1 and #2 relate to “Identification of a Food Safety or Quality Problem” and count 10 points for each correct answer. #3 relates to “Solution of a Food Safety or Quality Problem” and counts 30 points for each correct answer. Total of 50 points.

TEAM MEMBER NAME \_\_\_\_\_

CHAPTER \_\_\_\_\_

LETTER IDENTIFICATION # \_\_\_\_\_

Question #1: Does the complaint indicate a (check only one)  
FOOD SAFETY PROBLEM? (a) \_\_\_\_\_  
-or- a FOOD QUALITY PROBLEM?(b) \_\_\_\_\_

Question #2 Is the problem primarily? (check only one)  
■ Biological (a) \_\_\_\_\_  
■ Chemical (b) \_\_\_\_\_  
■ Physical (c) \_\_\_\_\_  
■ None of the above (d) \_\_\_\_\_

Question #3: Describe briefly a POSSIBLE SOLUTION to the food safety or food quality problem indicated in the letter. How is the problem corrected and how do you deal with the consumer?

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Gary Green

Photosynthetic Lane  
Plant City, GA

President  
ABC Food Company  
1225 Jones Avenue  
Anywhere, USA

Dear Mr. President:

The other day I purchased a bag of your Zippy Chips at a convenience store and got back in my car on the way to a business meeting. Upon opening the bag I found that the majority of chips had brown or green spots and edges. A very unappealing look and flavor throughout the bag. I am afraid I will have to search for another product to purchase while snacking.

An unhappy ex-customer,

Gary Green

# Triangulation test

The triangulation test is used to test the quality of a product and that it can be uniformly identified from various product types.

You will be given three samples of a product. You need to choose the one product that is different from the other two.

Color, taste, texture, aroma are all part of this evaluation.

Examples: juice (welchs vs store brand)

cereal (cheerios vs store brand)

Chocolate chips – various brands

Example of score sheet:

(circle best selection)

Trial 1:    A                    B                    C

Food Science CDE

Sensory Evaluation List

Cinnamon

Peanut Butter

Chocolate

Maple

Oregano

Basil

Lemon

Lime

Orange

Vanilla

Almond

Smoke (liquid)

Cherry

Pine

Onion

Butter

Menthol

Grape

Garlic

Peppermint

Clove

Nutmeg

Ginger

Molasses

Wintergreen

Banana

Coconut

Lilac

Raspberry

Strawberry

Licorice (anise)

## FOOD SCIENCE SCENARIO

TO: Research and Development Team

FROM: Marketing Management Guru's  
Bakers' Bounty Company

### NEW PRODUCT DEVELOPMENT

Bakers' Bounty is poised to take a bite out of the snack market. A healthy, tasty snack is never out of style. Time to shake up our traditional muffin and take the reliable format to new heights.

The primary target for growth is the 18 to 25 year olds that can match a trendy muffin with their latte or iced coffee.

The product format we are using today is a standard muffin tin. You may choose to offer a different format as you work on packaging, but we are limited in supplies and cooking materials for today.

We need your team to provide the spark for Bakers' Bounty growth. It is time for you to get to work on our next best selling product. The final product and marketing documentation will be presented as a group to our team of evaluators.

All Elements to Include are found on the sample score sheet.

Product Guidelines:

Quantity

Each team will be baking 6 muffins. You must develop the product first and allow 20 minutes for baking time while you finish presentation details.

## Basic Sweet Muffin Recipe (12 muffins)

1 egg  
1/2 c. milk  
1/4 c. vegetable oil  
1.5 c. flour  
1/2 c. sugar  
2 tsp baking powder  
1/2 tsp salt (or a bit less)

### Possible Ingredients:

Oatmeal can substitute for \_\_\_\_\_ flour  
Wheat flour can substitute for 1/2 of white flour  
Corn Meal can substitute for 1/2 of white flour

Ham  
Cheese  
Chocolate chips  
Nuts  
Jelly  
Fruits  
Cinnamon

### Packaging:

Clam shell containers are available for base line use. Each team may consider modifications or different types of packaging and describe that change to the judges.

### NOTE:

One area in the National Event is cost control. If the coordinators can develop a way to add this without driving them crazy, a cost component will be included. The goal is a strong product that is priced competitively, but covers the cost of production.

NEW YORK STATE FOOD SCIENCE AND TECHNOLOGY CDE  
TEAM PRODUCT DEVELOPMENT

SCORING SHEET

TEAM NAME \_\_\_\_\_

	<b>possible</b>	<b>team score</b>
1. Market needs met and Appropriate for target market	10 points	_____ pts
Sales plan	20 points	_____ pts
2. Product Design meets target	20 points	_____ pts
3. Economics – cost and pricing	20 points	_____ pts
4. Packaging suitable (10 pts each)	70 points	_____ pts
Label		
Display panel		
Name		
Ingredients		
Use by date		
Net weight		
Nutritional information		
5. Finished Quality analysis discussed	20 points	_____ pts
6. Team Organization and Presentation	20 points	_____ pts
7. RESPONSE TO JUDGES QUESTIONS	20 points	_____ pts

PRODUCT DEVELOPMENT TOTAL (200)

\_\_\_\_\_

NEW YORK STATE FOOD SCIENCE AND TECHNOLOGY CDE  
SCORE TABULATION SHEET

TEAM \_\_\_\_\_

	POSSIBLE	
PRODUCT DEVELOPMENT	200	_____
AROMA IDENTIFICATION	50	_____
CUSTOMER COMPLAINT LETTER	50	_____
TRAIINGULATION TESTS	50	_____
WRITTEN TEST	50	_____
TOTAL SCORE	400	_____

## Food Safety – Photo Identification

This part of the individual lab component includes several pictures of scenarios in food science. A meat cutter without a hairnet or hat on for example. An example of cross contamination. The pictures will show errors in food safety and participants should be able to identify the improper procedures or situations.

The answer sheet for this portion continues to change as the coordinators have not hit upon a format that works well for everyone. An example will be added to this guide once a format has been determined to be successful for all parties.