

OHIO FFA FOOD SCIENCE AND TECHNOLOGY
CAREER DEVELOPMENT EVENT
Effective August 1, 2004

The Ohio CDE closely models the National CDE. This document includes the complete event information as well as the differences that have been implemented at the state level.

I. PURPOSE

To stimulate learning activities in food science and technology related to the food industry and to assist students in developing a good working knowledge of sound principles used in a team decision-making process.

II. OBJECTIVES

1. To encourage FFA members to gain an awareness of vocational and professional opportunities in the field of food science and technology, marketing and management occupations.
2. To give FFA members the opportunity to experience group participation and leadership responsibilities in a competitive food science and technology program.
3. To help FFA members develop technical competence and personal initiative in a food science and technology occupation.
4. To provide opportunities for FFA members to participate in activities where they gain an appreciation for cooperative effort in the food industry.

III. EVENT RULES

1. The contest will be limited to 20 teams. Each district may send two chapters. Any spaces not filled by a district can be filled by another district, as determined by CDE coordinator.
2. The team will consist of four team members with all four team member's scores being totaled.
3. It is highly recommended that all participants be in official dress.

IV. EVENT FORMAT

The food science and technology career development event will consist of four activities,

- 1) an objective test (300 points)
- 2) a team product development project (400 points)

- 3) a practicum in food safety and quality (150 points)
- 4) a practicum in sensory evaluation (135 points).

This career development event will be a four person team activity. All team members will participate in all of the activities. This career development event will involve 2,740 total points per team. Individual scores will not include the product development team score.

A. EQUIPMENT

Materials student must provide – Each participant must have a clean, free of notes, clipboard and two sharpened No. 2 pencils. Each team must have at least one electronic calculator. Calculators must be silent, battery operated, and non-programmable.

B. TEAM ACTIVITY

Team Product Development Project Each team will receive a marketing scenario describing a need for a new or redesigned product that would appeal to a potential market segment. This scenario will contain a description of the existing marketing situation, competition, and potential target market segment to be served by the new product. It is the task of the team to design a new or reformulated food product or reformulate an existing product.

The team will be responsible for understanding and using the following concepts:

- Formulation of product to meet specified market requirements
- New package design to reflect developed product
- Nutritional label development and adjustments
- Processes and equipment used to produce and package the product
- Provide quality and safety control programs (i.e. quality tests, good manufacturing practices (GMP), and hazard analysis critical control point analysis (HACCP)).

Each team will be provided with materials to create a package label and necessary information on each product ingredient in order to develop a final product label.

The team will have 60 minutes to respond to the marketing scenario and reformulate or develop a new product, calculate a nutritional label, develop a label that includes the principal display panel, educational panel, nutritional label, and ingredient statement. At the end of the time period the team will turn in a 1-2 page written summary introducing their product and addressing the questions asked in the scenario, as well as the complete label for their product. Total number of points possible for this activity will be 400 points.

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Topic - The general topic of the product development activity will be provided to the eligible teams approximately one week prior to the state competition.

Evaluation Criteria
Product Development &
Written Proposal.....300 points

The proposal will be evaluated on the following topics:

Marketing/Diversity Processing/Packaging
Formulation Quality Control
Nutrition Economics

Food Safety

Label Design.....100 points

Principal Display Panel – includes all necessary elements, conveys information, and contains elements that appeal to consumer

Information Panel – includes all necessary elements and correct calculations of nutrition facts

C. INDIVIDUAL ACTIVITIES

1. Test

The objective questions administered during the Food Science and Technology examination will be designed to determine each team member's understanding of the basic principles of food science and technology. It will encompass the knowledge required of all of the other activities in the contest as well as the units 1, 3, 4, 5, 12, and 13 in Food Science, Safety and Nutrition. Team members will work individually to answer each of the 50 questions. Each person will have 50 minutes to complete the examination. Each question will be worth 6 points. Points will only be awarded for correct answers. The total number of points possible for this activity will be 300 points per individual (1200 points per team).

2. Practicums

Each team member will compete individually in both practicums.

a. Food Safety and Quality

1. Customer Complaint Letter

Each participant will be given a representative consumer complaint letter received by a food processing company. After reading the letter, the participant must first determine if the letter describes a food quality or food safety problem then indicate whether the nature of the problem is primarily biological, chemical, or physical. Because some problems may be considered borderline, participants are

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given a chance to briefly explain why they chose a particular answer. Finally, the participants must write a reply letter to the customer explaining the one or more steps the company will take to follow-up on the complaint. Participants will be given 15 minutes to complete this activity. The total number of points for this activity will be 50 points per individual (200 points per team).

2. Food Safety/Sanitation Problem Identification Participants will view ten photos of potential food safety and/or sanitation problems. A list of five Good Manufacturing Practices (GMPs) violation categories will be provided, as well as the option of "no violation." Participants must identify the type of problem in the photo and indicate which violation category the problem fits under. Each violation category may be used several times or not at all.

GMP Violation Categories

- improper personal hygiene
- safety hazard
- improper food handling
- improper chemical storage
- improper pest management
- no violation

Participants will be given 15 minutes to complete this activity. The total number of points for this activity will be 100 points per individual (400 points per team).

b. Sensory Evaluation

1. Taste Tests

This activity will consist of 5 triangle tests. A triangle test consists of three food samples. Two of the samples will be the same and one will be different. Participants will identify the different sample. Samples will be evaluated solely on taste. Participants are not required to consume (swallow) samples. Samples may be any of the following: food, beverage, prepared solutions (sweet, sour, salty, etc.). The total number of points for this activity will be 75 points per individual (300 points per team).

2. Aroma Identification

Each participant will be asked to identify the aroma in each of the 12 sample vials. A list of all 30 possible aromas will be provided. The total number of points for this activity will be 60 points per individual (240 points per team).

Aromas

001. Almond
002. Banana
003. Basil
004. Butter
005. Cherry
006. Chocolate
007. Cinnamon
008. Clove
009. Coconut
010. Garlic
011. Ginger
012. Grape
013. Lemon
014. Licorice (anise)
015. Lime
016. Maple
017. Menthol
018. Molasses
019. Nutmeg
020. Onion
021. Orange
022. Oregano
023. Peanut Butter
024. Peppermint
025. Pine
026. Raspberry
027. Smoke
028. Strawberry
029. Vanilla
030. Wintergreen

V. TIEBREAKERS

Should a tie occur in the overall team placing, the tie will be broken by the highest team product development score. If this score does not break the tie, then the highest number of total points earned from the objective test (adding all four team member scores) will break the tie. To identify the high individual for this event in case of a tie, the highest examination score will be used as the first tie breaker, followed by the highest Food Safety and Quality practicum score, as the second tiebreaker.

VI. REFERENCES

This list of references is not intended to be inclusive. Other sources may be utilized and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation.

Test –

Food Science, Safety and Nutrition – a special project from the National Council of Agricultural Education.

- This is available from Ohio State University's Curriculum Materials Service in either book (item #50007TC) or CD (item #50006TC) form.

Product Development –

A Food Labeling Guide, 1994, Food and Drug Administration Center for Food Safety and Applied Nutrition,

www.cfsan.fda.gov/~dms/flg-toc.html

- Focus on different parts of label, location of each part, and elements required on each part. Exact dimensions, type size, etc. are not important.

General –

Introduction to Food Science, 2001, Parker, Delmar Learning

Food Science and Safety, 1998, Seperich, Interstate Publishers, Inc.

Principles of Food Sanitation, 1999, Marriott, Aspen Publishers, Inc.

Institute of Food Technologists, www.ift.org